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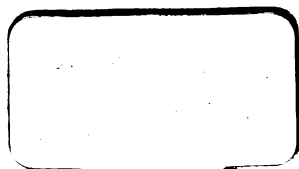
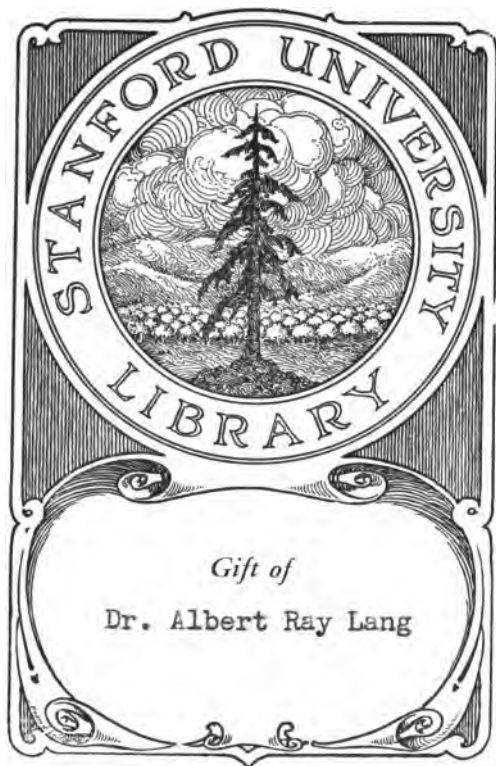
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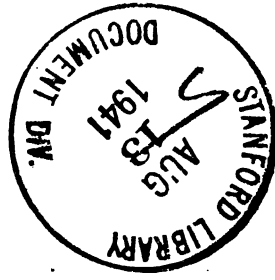
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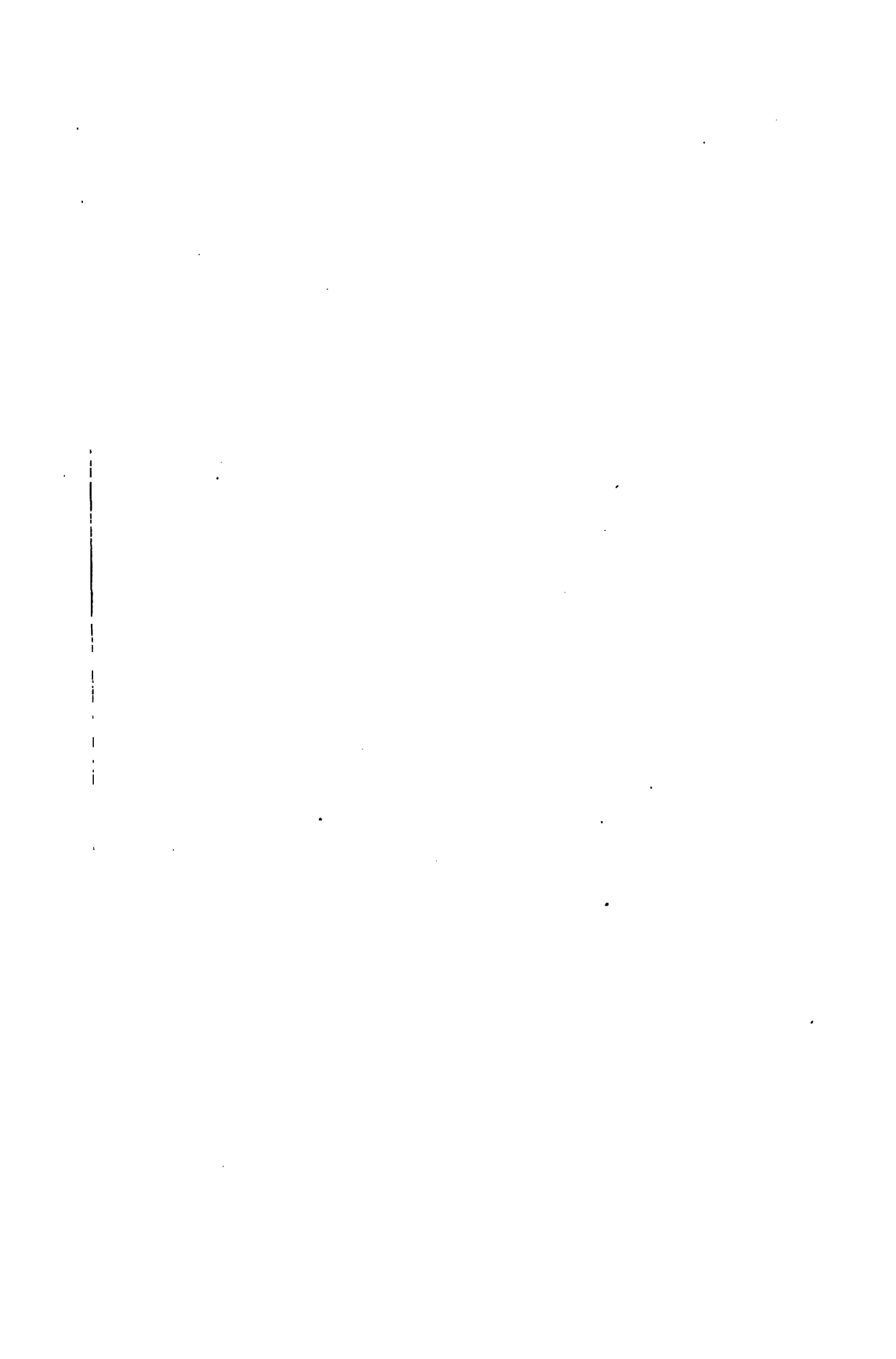
ANNUAL REPORT
OF THE
GOVERNOR OF THE PANAMA CANAL
—
1922





Mr. A. R. Lang

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ANNUAL REPORT
OF THE
GOVERNOR OF
THE PANAMA CANAL
FOR THE
FISCAL YEAR
ENDED JUNE 30
1922



WASHINGTON

GOVERNMENT PRINTING OFFICE

1922

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APPENDIXES NOT PRINTED.

REPORTS OF HEADS OF DEPARTMENTS AND DIVISIONS.

Reports for the fiscal year 1922 have been made as follows and may be consulted at the Washington office of The Panama Canal or at the office of the Governor, Balboa Heights, Canal Zone:

Engineer of maintenance:

- Assistant engineer of maintenance, report of.
- Pacific locks, report of superintendent.
- Atlantic locks, report of superintendent.
- Electrical division, report of electrical engineer.
- Municipal engineering division, report of municipal engineer.
- Dredging division, report of superintendent.
- Office engineer.
- Meteorology and hydrography, report of chief hydrographer.
- Surveys, report of assistant engineer.
- Gatun dam and back fills, report of general foreman.

Marine division, report of superintendent.

Mechanical division, report of superintendent.

Supply department, report of chief quartermaster.

Executive department, report of executive secretary:

- Division of civil affairs, report of chief of division.
- Police and fire division, report of chief of division.
- Division of schools, report of superintendent of schools.
- Bureau of clubs and playgrounds, report of general secretary.

District attorney, report of.

Accounting department, report of the auditor.

Health department, report of chief health officer.

Counsel, Panama Railroad Co., and land agent, The Panama Canal and Panama Railroad Co., report of.

Purchasing department, report of the general purchasing officer and chief of Washington office.

ANNUAL REPORT
OF THE
GOVERNOR OF THE PANAMA CANAL.

THE PANAMA CANAL,
OFFICE OF THE GOVERNOR,
Balboa Heights, Canal Zone, September 17, 1922.
The Honorable the SECRETARY OF WAR,
Washington.

SIR: I submit herewith a report covering the operation of The Panama Canal during the fiscal year ended June 30, 1922.

Respectfully,

JAY J. MORROW,
Governor, The Panama Canal.

INTRODUCTION.

NET REVENUE OF THE CANAL AND ITS AUXILIARIES.

In spite of the fact that gross receipts from tolls and other miscellaneous receipts grouped under the head of "transit revenue" were slightly less than in 1921, the net transit revenue of The Panama Canal in 1922 was \$3,466,574.69, as compared with \$2,711,816.56 in the previous year. This result was obtained by a material reduction in operating expenses.

Auxiliary business operations were not so successful. These fall into two divisions, those conducted directly by The Panama Canal, of which the most important are the mechanical shops, material storehouses, and fuel-oil plants; and those conducted by the Panama Railroad Co., including the coaling plants, commissaries, and cattle industry. Panama Canal business operations showed a profit of \$323,259.16, as compared with a profit of \$564,211.20 in 1921; and Panama Railroad operations, exclusive of the steamship line, showed a loss of \$710,301.94, as compared with a profit of \$83,282.11 in 1921. The loss on Panama Railroad operations was due primarily to writing down the value of stocks of coal, cattle, and commissary supplies to keep pace with a falling market.

REPORT OF GOVERNOR OF THE PANAMA CANAL.

In tabulated form the financial results of the operation of the canal and its auxiliaries on the Isthmus were:

	1922	1921
Net transit revenue.....	\$3,466,574.69	\$2,711,816.56
Net revenue on Panama Canal business operations.....	323,259.16	564,211.20
Net total revenue, Panama Canal.....	3,789,833.85	3,276,027.76
Net revenue on Panama Railroad business operations ¹	710,301.94	83,282.11
Combined net revenue.....	3,079,531.91	3,359,309.87

¹ Exclusive of steamship line.

² Loss.

SERVICE RENDERED BY THE CANAL TO SHIPPING.

In terms of service to shipping the main items in the record for the fiscal year 1922, as compared with 1921, are as follows:

	1922	1921
Transits of the canal by ships paying tolls.....	2,736	2,892
Transits by public vessels of the United States, free.....	276	426
Calls at canal ports by ships not transiting the canal.....	747	842
Cargo handled at ports (tons).....	830,134	1,109,726
Coal sales and issues (tons).....	251,616	468,815
Coal, number of ships served other than Panama Canal.....	843	1,345
Fuel oil pumped (barrels).....	6,069,993	4,565,784
Fuel oil, number of ships served other than Panama Canal.....	1,422	1,175
Ships repaired other than Panama Canal equipment.....	738	671
Ships dry docked other than Panama Canal equipment.....	108	104
Provisions sold to ships.....	\$640,692.66	\$949,380.29
Chandlery sold to ships.....	\$116,740.85	\$290,466.32

SECTION I.

CANAL OPERATION AND TRADE VIA PANAMA.

TRAFFIC IN 1922.

A steady growth of the traffic through The Panama Canal to double, triple, and quadruple its present volume can be confidently predicted, but there may well be years when for temporary causes growth is arrested and there is even a slight decline. The fiscal year just ended was such a year. It was a period of wide-spread commercial stagnation, and cargoes became so scarce that a large proportion of the tonnage of all the maritime nations was withdrawn from service. It is not surprising that this was reflected to some extent in the traffic statistics of The Panama Canal.

The number of vessels making the transit (2,736) was less than in the preceding year (2,892), and they carried less cargo (10,844,910 tons, as compared with 11,599,214 tons). Their aggregate net tonnage, however, was slightly greater, being 11,417,459, as compared with 11,415,876 in 1921. This denotes, of course, an increase in the average size of vessels using the canal.

The traffic showed no important fluctuations from month to month. It was lightest in July, 1921, when 206 vessels of 810,613 net tons passed through, and heaviest in October, 1921, when the number of vessels was 255 and their aggregate net tonnage 1,069,554. The figures month by month are shown in the following table:

Month.	Number of ships.	United States equivalent net tonnage.	Panama Canal net tonnage.	Tolls.	Cargo (tons).
1921.					
July.....	206	652,439	810,613	\$804,503.11	708,982
August.....	226	792,442	965,276	955,380.78	839,273
September.....	221	745,744	925,137	892,001.54	754,894
October.....	255	986,106	1,069,554	1,047,935.62	985,775
November.....	222	753,697	942,411	923,048.70	855,440
December.....	239	827,340	1,017,244	1,003,508.27	953,053
1922.					
January.....	210	689,035	846,516	847,767.55	807,298
February.....	212	710,548	886,535	866,266.18	838,074
March.....	234	786,759	975,811	956,726.76	960,089
April.....	230	771,932	974,833	953,256.11	1,046,047
May.....	243	828,683	1,032,816	1,015,057.37	1,158,507
June.....	228	773,796	970,713	932,290.42	977,478
Total.....	2,736	9,201,613	11,417,459	11,197,832.41	10,884,910

NATIONALITY OF VESSELS.

There was a decrease in the number of American vessels using the canal but an increase in their aggregate net tonnage. British vessels show a falling off both in number and tonnage, and the same is true of Norwegian, Danish, Italian, and Chilean vessels. The number of Japanese vessels increased from 136 to 189, and their aggregate net tonnage from 613,245 to 872,466. French, German, Dutch, and Swedish vessels register an increase. American vessels carried 45.5 per cent of the cargo moving through the canal, British vessels 30.5 per cent, Japanese vessels 9.5 per cent, and Norwegian vessels 3.7 per cent. This represents a relative increase for the Japanese and a loss for the Norwegians, while Americans and British hold approximately the same share in the traffic as in 1921. The complete figures for 1922 appear in the table below.

Nationality.	Number of ships.	United States equivalent net tonnage.	Panama Canal net tonnage.	Tolls.	Cargo (tons).
British.....	935	3,080,178	3,795,526	\$3,728,007.80	3,329,861
Chilean.....	53	92,623	150,398	115,757.90	46,182
Costa Rican.....	1	25	18	18.75	0
Danish.....	53	182,969	227,473	222,146.65	272,779
Dutch.....	66	212,300	293,428	260,138.38	290,573
French.....	51	174,489	190,171	216,475.40	139,463
German.....	37	96,705	122,893	120,087.25	121,888
Greek.....	5	17,082	18,618	19,293.40	11,956
Italian.....	20	58,995	73,393	75,511.30	38,851
Japanese.....	189	777,172	872,466	953,949.00	1,044,515
Mexican.....	6	2,071	2,219	1,780.77	10
Norwegian.....	113	320,876	385,007	374,870.62	408,268
Panaman.....	8	668	700	611.30	526
Peruvian.....	60	82,517	161,930	103,035.30	64,370
Spanish.....	9	23,319	27,264	32,712.88	23,701
Swedish.....	35	85,961	124,446	105,939.90	141,448
United States.....	1,095	3,993,663	4,971,509	4,867,495.81	4,950,519
Total.....	2,736	9,201,613	11,417,459	11,197,832.41	10,884,911

FREE TRANSIT OF PUBLIC VESSELS OF THE UNITED STATES.

No tolls are charged for the transit of naval vessels and other public vessels of the United States, and they are not included in the foregoing statistics of commercial traffic, but the passage of such vessels represents a service the value of which should not be overlooked. The number of public vessels of the United States making the transit in 1922 was only 276, as compared with 426 in the previous year. The difference is accounted for by the circumstance that in 1921 the Atlantic Fleet passed through the canal and back for a manoeuvre and battle practice combined with the Pacific Fleet. Similar manoeuvres were planned for 1922, but they were not held. If tolls had been assessed on public vessels using the canal, the additional revenue would have totaled \$628,423.24.

CARGO PASSING THROUGH THE PANAMA CANAL IN 1922.

The cargo passing through The Panama Canal during the fiscal year 1922 (10,884,910 tons) was equivalent to 93.8 per cent of the cargo handled in the previous year (11,599,214).

The greatest shrinkage was in the trade with the west coast of South America. Exports from the Atlantic and Gulf ports of the United States to that region fell from 933,261 to 244,514 tons. European exports to South America declined only from 297,166 to 283,804 tons. Exports from South America through the canal to the United States were 548,609 tons, as compared with 975,597 in 1921, and to Europe 663,127, as compared with 922,499. Crude oil shipments from Mexico to South America fell off from 654,659 to 256,562 tons. The total loss of cargo in this South American trade was 1,786,566 tons.

As serious as this slump in South American business has been, its economic causes are temporary, and nothing in the future is more certain than that the development of the known resources of Colombia, Ecuador, Peru, and Chile will support a rapidly increasing volume of traffic through the canal. Indications of a partial recovery in the South American trade were perceptible at the close of the year.

The trade with Australasia has also fallen off. Exports from the United States to Australasia declined from 620,428 to 288,090 tons, and exports from Europe from 391,848 to 359,895 tons. Imports from Australasia to the United States fell from 147,877 to 45,957 tons, and to Europe from 579,745 to 381,538 tons. The total loss of cargo in the Australasian trade amounted to 664,418 tons. In this case also economic conditions are in the main responsible for the decline, but there has also been some diversion of traffic from Panama to competing routes.

Exports from the United States to the Far East increased from 1,213,906 to 1,728,172 tons. Imports from the Far East fell from 428,044 to 303,315 tons.

The most remarkable gains of the year were in the trade of the Pacific coast of North America.

Exports from the west coast of the United States to Europe were 1,302,183 tons, as compared with 1,154,840 in 1921, and from western Canada to Europe 420,272, as compared with 154,513. Western Canadian imports from Europe increased from 20,416 to 149,553 tons, and American imports from 144,591 to 186,696 tons. The combined increase of cargo in these two closely allied trades aggregated 584,344 tons.

Cargo moving from east to west in the United States coastwise trade increased from 698,429 to 1,288,075 tons, and cargo moving from west to east from 673,959 to 1,274,452 tons. The total gain in

Commercial traffic through The Panama Canal during the fiscal year 1922, classified by leading trade routes—Continued.

	Num- ber of ships.	Panama Canal net tonnage.	Tons of cargo.	Percentage of total cargo.
Between east coast of United States and west coast of Canada:				
Atlantic to Pacific.....	19	91,667	88,408	0.8
Pacific to Atlantic.....	30	146,111	159,921	1.4
Total.....	49	237,778	248,329	2.3
Europe to west coast of Canada:				
Atlantic to Pacific.....	41	222,210	149,553	1.4
Pacific to Atlantic.....	56	299,327	420,272	3.8
Total.....	97	521,537	569,825	5.2
Miscellaneous trade routes and sailings:				
Atlantic to Pacific.....	216	604,425	550,495	5.0
Pacific to Atlantic.....	153	360,311	200,838	1.8
Total.....	369	964,736	751,333	6.9

MOTOR SHIPS.

Although the number of motor ships in operation in the world's trade was undoubtedly greater than in previous years, this was not reflected in the Panama Canal statistics. There were only 77 transits by motor ships in 1922 as compared with 99 in 1921. The aggregate net tonnage of motor ships in 1922 was 369,762. Reduced to a percentage basis, the motor ship represented 2.8 per cent of all vessels using the canal and 3.2 per cent of the total annual tonnage.

DETAILS OF THE TRADE.

Further details of the trade through the canal will be found in the following tables in Section V of this report:

Table 54. Summary of commercial traffic, 1915-1922.

Table 55. Commercial traffic by nationality, 1915-1922.

Tables 56 A and B. Origin and destination of cargo, 1922.

Tables 57 A, B, and C. Commercial traffic by nationality, ships, tonnage, and cargo, 1915-1922.

Table 58. Commercial traffic by nationality, ships, tonnage, tolls, and cargo, 1915-1922.

INCONVENIENCE OF THE DUAL SYSTEM OF MEASUREMENT.

Attention is again invited to the dual system of measurement on which tolls are assessed. If during the fiscal year 1922 the Panama Canal measurement rules alone had been followed, the revenue would have been greater by \$2,174,044.35. The introduction of the United States measurement rules as a factor in the computation is equivalent to an irregular reduction of the toll rate under which some vessels

benefit more than others. The dual system of measurement, necessary until remedial legislation can be obtained, is cumbersome and onerous. The practical result is that tolls are collected on a basis which is not fixed and permanent, but may change between the transits of a vessel or with minor alterations occurring in the course of preparations for loading or discharging or made on account of the weather. In the interest of fair play and simplicity of administration the Panama Canal measurement rules should be made the sole basis for the assessment of tolls.

LOCKAGES AND LOCK MAINTENANCE.

The capacity of the locks was not seriously tested at any time during the year. The average number of lockages a day at Gatun was 7.67, at Pedro Miguel 8.389, and at Miraflores 8.1397. At Gatun both chambers were available for lockages during the entire year, with the exception of a few days when minor repairs were being made on the gates and machinery at the convenience of traffic. At Miraflores one flight of locks was out of commission for overhauling from December 12, 1921, to April 21, 1922. Delays and accidents due to faulty operation, failure of equipment, and other causes were few in number and of negligible magnitude.

Beginning August 15, 1921, a new system of dispatching vessels through the canal on a prearranged time schedule was introduced. This system, besides permitting of a more economical distribution of the work at the locks, is safer than the method formerly used in that it insures the arrival of vessels at the locks when there are no adverse currents set up by lock operations. The original schedule has been modified from time to time as experience suggested, and it is now working smoothly with a minimum of delay to shipping. Vessels arriving at Cristobal inner harbor prior to 1.30 p. m. and at Balboa inner harbor prior to 1.45 p. m. are put through the canal on the same day. A materially better service is impracticable while the operation of the canal is confined to the hours of daylight, and it will be some years before the volume of traffic will require or justify night operation.

Five new electric towing locomotives, built at the Balboa shops and wired by the lock forces, were put in operation during the year. They were distributed: Two to Gatun, one to Pedro Miguel, and two to Miraflores.

Such maintenance work at all locks was attended to as was required to keep all machinery and plant in first-class condition.

Lockages during the year are summarized in the following table:

Month.	Gatun.		Pedro Miguel.		Mirafleres.		Total.	
	Lock-ages.	Ves-sels.	Lock-ages.	Ves-sels.	Lock-ages.	Ves-sels.	Lock-ages.	Ves-sels.
1921.								
July.....	210	261	239	291	236	290	685	842
August.....	245	294	276	337	274	342	795	973
September.....	225	276	247	288	243	285	715	849
October.....	263	307	285	342	288	344	836	993
November.....	226	258	256	300	255	298	737	856
December.....	248	306	269	335	256	338	773	979
1922.								
January.....	219	268	239	290	225	286	683	844
February.....	206	255	224	256	198	252	628	763
March.....	235	279	247	285	233	286	715	850
April.....	235	266	261	300	248	303	744	869
May.....	246	286	266	296	261	288	773	870
June.....	243	282	253	279	254	278	750	839
Total.....	2,801	3,338	3,062	3,599	2,971	3,590	8,834	10,527

POWER FOR CANAL OPERATION.

Electric power for the operation of the canal was derived from the hydroelectric plant at Gatun, with the steam-generating station at Mirafleres in reserve.

The average combined generator output per month was 4,856,905 kilowatt hours, as compared with 5,958,660 kilowatt hours per month during the previous year. There was an average of 4,104,497 kilowatt hours distributed from substations, as compared with a corresponding average of 4,991,677 kilowatt hours in 1921. This gives a transmission and distribution loss of 15.65 per cent in 1922, as compared with a loss of 16.23 per cent in 1921.

The steam-generating station at Mirafleres was maintained on the basis of stand-by service, and was required to carry load on 15 occasions. The average rate of fuel-oil consumption for this plant was 1,762 barrels per month, as compared with a corresponding rate of 2,313 barrels for the previous year.

The cost of power generated by the Gatun and Mirafleres plants, including the cost of distribution, was \$0.0105 per kilowatt hour, as compared with \$0.0089 in 1921.

WATER SUPPLY.

The water supply available for lockages, hydroelectric power, and other uses was ample at all times during the year. The level of Gatun Lake fell from 87 feet at the beginning of the dry season to 84.27 feet on May 7, 1922, from which date recovery of storage was begun. A lake level of 80 feet is ample for navigation. The steam-generating station at Mirafleres was maintained on the basis of stand-by service, and was required to carry load on 15 occasions

during the year, but these were emergencies only and not due to any lack of water for the operation of the hydroelectric station at Gatun. The following table shows the source and disposition of water in Gatun Lake:

	Per cent.	Billion cubic feet.
Run-off above Alhajuela.....	36.7	69.57
Yield from land area below Alhajuela.....	41.3	78.35
Direct rainfall on lake surface.....	22.0	41.65
Total.....	100.0	189.57
Evaporation from lake surface.....	10.4	19.60
Gatun Lake lockages.....	11.3	21.50
Hydroelectric power.....	26.0	49.34
Spillway waste.....	51.2	97.01
Leakage and municipal water.....	.9	1.67
Increased storage.....	.2	.45
Total.....	100.0	189.57

While there is ample water to take care of the present volume of traffic and the estimated increase of the next several years even under extreme dry-season conditions, the eventual need of additional storage has been borne in mind, and work was continued on a survey of the valley of the Chagres and its tributaries above Alhajuela to determine accurately what volume of water can be impounded by a dam constructed across the gorge at that point. The Alhajuela dam has always been considered an essential feature of the lock canal, but its construction can be safely deferred for a number of years. The possibility of diverting the Rio Indio into Gatun Lake was also investigated during the year, and this project was abandoned as infeasible.

MAINTENANCE OF CHANNEL.

The maintenance of the channel involves the removal of silt and of material carried into the canal prism by slides in the Gaillard Cut. As the latter can not be predicted or estimated, it is necessary to hold in reserve for emergencies equipment in excess of what would be required for ordinary maintenance work.

The Cucuracha slide and the Culebra slides showed intermittent movements during the year, but were controlled without difficulty by dredging out the material before it reached the prism. A general movement occurred on the afternoon of July 14, 1921, on the east side of the cut one-half mile north of the Culebra slides and opposite the barge-repair station, carrying a mass of earth and rock into the channel amounting to 185,000 cubic yards. This slide caused such shoaling in the canal that a channel only 120 feet wide and 30 feet deep along the west bank was available for the passage of ships.

No serious inconvenience to traffic was occasioned, and two dredges working until the end of August removed the obstruction.

A statement of all dredging during the fiscal year follows:

Location:	Cubic yards removed.
Canal prism—	
Atlantic entrance.....	0
Gatun Lake.....	0
Gaillard Cut.....	1, 436, 300
Miraflores Lake.....	0
Pacific entrance.....	2, 597, 300
Total.....	4, 033, 600
Auxiliary, Balboa inner harbor.....	122, 100
Grand total.....	4, 155, 700

This dredging was all maintenance work, with the exception of 105,700 cubic yards removed by cutting off a point of land just south of the Miraflores locks to improve the alignment of the original channel.

The amount of dredging that will be required during the fiscal year 1923 is estimated at 3,175,000 cubic yards.

As a minor item in channel maintenance it was necessary to continue the campaign against the water hyacinth, and 7,871,330 of these plants were destroyed either by pulling or spraying.

AIDS TO NAVIGATION.

In addition to continued maintenance of lights already established in the canal and adjacent waters, an 18,500-candlepower light was established on the southwest side of Flamenco Island, in Panama Bay, latitude 8° 54' 35" north, longitude 79° 31' 23" west, focal plane 160 feet, visible for 20 miles, exhibited from a square concrete pedestal surmounted by lantern, painted white. The characteristics of this light from sea are: Showing white from 290° to 5° through north; red sector from 5° to 103°; obscured from 103° to 290° through south.

New four-room keepers' quarters were constructed at Toro Point and the lighthouse tower reinforced with concrete for a distance of 30 feet. New concrete tank houses were constructed at the Cape Mala and Taboguilla Lights. At Margarita Point (Fort Randolph) new front and rear ranges were constructed for the United States Army.

ACCIDENTS.

There were very few marine accidents in canal waters. Investigations were conducted by the board of local inspectors in only 10 cases, of which 4 were trivial.

On July 16, 1921, the U. S. S. *Nevada*, southbound through the canal, struck the bank at the northern end of the Gaillard Cut, and

was damaged to the extent of approximately \$5,000. The canal assumed liability for the repairs.

On August 4, 1921, the steamship *Hampton Roads*, owned by the United States Shipping Board, southbound through the canal, struck the center approach wall at the Gatun Locks, and the resulting damages to the ship were estimated at \$1,000, for which the canal accepted liability.

On January 13, 1922, the British steamship *Hatipara*, owned by the British India Steam Navigation Co., southbound through the canal, ran down a small schooner-rigged sailing cayuca in Cristobal Harbor. The property loss was slight, but of the three men in the cayuca two were drowned. The *Hatipara* and the canal pilot on board were exonerated.

On March 18, 1922, the Norwegian steamship *Havo*, southbound through the canal, struck the center wall of the Pedro Miguel Lock, and was damaged to the extent of \$2,000. The ship was held responsible for the accident.

On April 2, 1922, the Dutch steamship *Wolsum*, outward bound, and the American steamship *West Himrod*, inward bound, were in collision at the entrance to Cristobal Harbor. The *Wolsum's* damages were estimated at \$5,000 and the *West Himrod's* at \$6,000. This case is now pending in the courts.

On June 16, 1922, the Danish steamship *Nordfarer*, southbound through the canal, struck barge No. 137 in the cut near Paraiso. Damages to the barge were estimated at \$12,430. The ship was also damaged. It was held that the accident was due to the poor steering qualities of the ship when heavily laden and steaming at slow speed. This case is also pending in the courts.

SALVAGE OPERATIONS.

The Panama Canal maintains two ocean-going tugs, one at Cristobal and one at Balboa, available for towing operations, and the wrecking tug *Favorite*. The latter is a 12-knot steamer of 1,200 horsepower, equipped with a 25-ton derrick and a powerful modern towing engine. She has cargo space for about 800 tons and carries 500 tons of water. Due to the great amount of water ballast, she can be lightened to operate in shoaler water than would ordinarily be the case with a vessel of her size and power. During the last months of the fiscal year the *Favorite* was converted from coal to oil burning, and can now remain on a job for 30 days without refueling. The salvage equipment includes four portable 12-inch centrifugal gasoline-driven wrecking pumps and four 4-inch submersible electric salvage pumps, with a combined capacity of 2,240 tons discharge per hour, as well as a number of steam-driven portable pumps which

considerably augment this capacity. There is ground tackle of all descriptions and reserve supplies of wire and chain cable to any extent required.

The most important and difficult salvage operation of the year was in connection with the steamship *Garfield*, of the Grace Line, which went ashore in Galera Bay on the northern coast of Colombia on January 21, 1922, and was driven $1\frac{1}{2}$ miles through a series of bars, coming to rest in 5 feet of water. To get the *Garfield* out of the shallows it was first necessary to run out 8,300 feet of wire cable to ground anchors, and this was successfully accomplished in spite of the heavy seas which greatly impeded the work. The *Garfield* was finally hauled out to deep water on March 18 and towed into Cristobal, with her cargo intact and her hull very little damaged. The *Favorite* had been standing by since January 24.

Other important salvage operations during the year were:

The steamship *Lake Elmont*, belonging to the United States Shipping Board, went ashore near Cartagena, Colombia, early in January, 1922. The *Favorite* left the canal to go to her assistance on January 4, and towed her to Cristobal for repairs, arriving January 11.

The steamship *Willpolo*, of the William Steamship Co., lost her propeller on April 5 when 900 miles north-northwest of Panama. The tug *Tavernilla* was sent to her assistance on April 10, arrived alongside April 14, and towed her to San Pedro, a distance of 1,940 miles, arriving there on April 28. The tug subsequently returned to Balboa, arriving on May 15.

The steamship *W. J. Hanna*, belonging to the Standard Oil Co. of New Jersey, broke a propeller shaft off the coast of Peru. The tug *Gorgona* left Balboa on April 6 to take her in tow and brought her into port on April 20.

The *Favorite* also rendered assistance in July, 1921, to the steamship *Koyo Maru*, stranded on Serrana Bank, about 300 miles north of the Atlantic entrance to the canal. This was mentioned in my last annual report.

The Panama Canal will undertake salvage operations either on a per diem basis for the use of the equipment, a fixed price for the job with graduated reimbursement in case of failure or partial success, or on the basis of "no cure, no pay." The salvage section is maintained for service rather than for revenue, and whatever form of contract owners or underwriters may prefer the efforts of the wrecking crew will be to do quick and efficient work consistent with the canal's reputation.

QUARANTINE.

The simplified quarantine procedure adopted at the canal to expedite the transit of vessels is explained in Section III of this report.

SECTION II.

BUSINESS OPERATIONS.

The business operations of the canal and Panama Railroad are indicated in detail on the chart accompanying the explanation of the new joint accounting system (Section IV); and further details of the business activities of the canal are given in the accounting statements which form part of Section V. Reference is especially made to Tables 14, 17, 19, 21, 27, 33, 34, 43, 44, 53. In the following pages only the more important business enterprises of the canal and railroad are referred to. In case the enterprise is conducted by the Panama Railroad statement to that effect is made.

REPAIRS TO VESSELS—MECHANICAL WORK.

The mechanical shops at Balboa and Cristobal were operated on a reduced scale. Repair work and manufacturing jobs for the canal and the Panama Railroad were of less magnitude than in previous years, and fewer jobs were obtained from the United States Navy and from vessels operating through the canal. The value of work done in 1921 was \$6,823,248.42. In the fiscal year 1922 it was only \$2,648,075.43, distributed as follows:

Class.	Amount.	Per cent of total.
Marine.....	\$1,364,483.22	51.53
Railroad.....	533,172.70	20.13
Miscellaneous.....	408,020.35	15.41
Manufacture for stock.....	342,399.16	12.93

Of this total, \$920,866.52 worth was done for individuals and companies, including the Panama Railroad Steamship Line, \$953,653.70 for The Panama Canal, \$636,571.09 for the Panama Railroad, and \$136,984.12 for other departments of the United States Government.

Work for individuals and companies.—The largest single job handled during the year was the reconditioning of the steamship *Panama*, of the Panama Railroad Steamship Line. The work included the installation of new boilers and a general overhaul of hull, machinery, and superstructure.

The Chilean battleship *Almirante Latorre*, one of the largest vessels of its class afloat, was dry-docked for the second time for cleaning and painting.

The tanker *K. R. Kingsbury*, with a full cargo of lubricating oil on board, was dry-docked for the purpose of renewing a propeller blade. This was a very large vessel, and the weight and fluid nature of the cargo made the docking an unusual performance.

A most unusual and exacting job was completed by the Balboa shops in straightening a twisted crank shaft from the port auxiliary compressor engine of the *Pedro Cristopherson*, distorted to a total of about 63° from a vertical line from No. 1 throw to the end of the shaft. When the rigidity of the shaft, the general twist over its entire length, and the small amount of material lost in remachining are considered, it is believed that an unusually difficult job was successfully handled.

Work for the Navy.—The cruisers *Dolphin* and *Birmingham* were dry-docked, and for the latter a broken propeller shaft was changed, including the manufacture of couplings and the machining of the new shaft. Six submarines and various small craft at the Coco Solo naval base were dry-docked and minor repairs effected. Annual repairs were made to submarine *O-12*.

Work for The Panama Canal.—The usual maintenance work on the floating equipment and rolling stock of the canal was handled. Five electric towing locomotives for the locks were completed and delivered and repair and manufacturing jobs were handled for various departments and divisions as required.

Work for the Panama Railroad.—A reduction of \$519,110.10 was made in the cost of work done by the mechanical division for the Panama Railroad and charged against maintenance of way, maintenance of equipment, and transportation. This saving is principally accounted for by the policy of retiring unnecessary rolling stock, but considerable savings were made through the utilization of salvaged material and through careful attention to all phases of the work. The number of heavy car repair jobs was 223 and of light repairs 594.

One first-class coach and three second-class coaches were rebuilt, and two first-class and two second-class coaches were refinished in caoba blanca, a native hardwood. Heavy repairs to locomotives were made in 37 cases and light repairs in 2,977 cases. The work of segregating equipment according to its usefulness and physical condition was completed, and 104 freight cars were scrapped out of 209 condemned. Fifteen of the retired 201-class locomotives were dismantled and prepared for shipment to the purchaser in the United States.

Dry docks.—At Balboa 50 vessels were dry-docked for The Panama Canal and 23 at Cristobal. The number of other vessels dry-docked was 43 at Balboa and 65 at Cristobal.

Volume of work and reduction of force.—The falling off in volume of work, which began to be noticeable during the latter half of the

previous fiscal year, continued until December, 1921, since when the volume of work has been fairly constant—but very much below what it was during the two years following the war. This has necessitated a very radical reduction of force. For the month of June, 1922, the average total force working, not including employees on leave or furloughed, was 861, as compared with an average of 2,621 for the fiscal year 1920–21 and of 2,869 for 1919–20. The force now employed is much below what it should be for the economical operation of so extensive a plant, and if any large job were to be handled it would be necessary to send to the United States for additional men.

It is believed that the lowest point in volume of work handled has now been reached. Work for The Panama Canal will probably not increase in amount, and may even be less in future than in the past, but work for commercial shipping should gradually increase. However, the most that can be hoped for from commercial shipping is emergency work on vessels using the canal and possibly an occasional overhauling job on vessels that have either Balboa or Cristobal as a terminal port. In the latter case the mechanical division must be able to compete successfully with repair plants at the other end of the run. The majority of ships passing through the canal are laden and on a definite voyage and could not afford to stop here for extensive repairs even if the work cost materially less than elsewhere, as the running expenses of the ship would more than offset any possible saving on the repair bill.

For the fiscal year 1923 there is reason to expect a slight increase in orders from the War Department and from the Navy.

Costs.—A great deal of attention has been paid to the cost of work. During construction days and the period of great activity during and after the war economy was more or less subordinated to rapidity. But lately the cost of work has become the most important consideration in the minds of prospective customers. A realization of this on the part of all employees has led to a greater average output, and there has been an appreciable reduction in the final cost of work.

With such a great reduction as took place during the fiscal year 1922 in the volume of work, it has been a serious problem to cut down the overhead. The average overhead percentage for the marine group of shops was 54.43, which is considered a very creditable showing in comparison with 45.26 for the preceding year, when the amount of work done was so very much greater. It is believed that this rate will compare very favorably with the rates at navy yards and industrial plants.

The cost of work has also been favorably affected by a close attention to estimates. Another factor, and one that has many times contributed to the satisfaction of customers, was the inauguration of flat rates, whereby the amount to be charged is determined and paid

before the work is started. This system was authorized November 26, 1921. Prior to that date work was accepted only on a cost plus basis.

COAL.

Coal was supplied to commercial vessels at the coaling plants of the Panama Railroad at Cristobal and Balboa to the amount of 228,231 tons. The total coaling business was as follows:

	1922	1921		1922	1921
Commercial vessels.....	228,231	424,680	United States Navy.....	(1)	.....
Panama Railroad.....	4,519	9,622	Miscellaneous.....	3,939	5,278
Panama Canal.....	8,584	20,817			
United States Army.....	6,343	8,418	Total.....	251,616	468,815

¹ The Navy maintains its own supply, from which 38,044 tons were delivered in 1922.

The total coal on hand June 30, 1921, was 144,683 tons; received during the fiscal year 1922, 275,874 tons; sold, 251,616 tons. Receipts from sales, including charges for handling Navy coal, were \$3,329,955.92; cost of repairs, depreciation of plant, and handling coal was \$1,103,919.22; and the loss on the year's business was \$424,112.56, due mainly to price fluctuations, which forced the sale of coal at a loss in order to move it at all, and to the large decrease in the tonnage handled through the plant which automatically increases the cost per ton.

The sales fell from a monthly average of 34,000 tons per month during the latter half of the fiscal year 1921 to an average of 20,968 tons per month during the fiscal year 1922.

The selling price of coal trimmed in bunkers at Cristobal on July 1, 1921, was \$14 per ton of 2,240 pounds; on July 10, \$15; October 15, \$12; December 15, \$10 in quantities exceeding 1,000 tons for vessels transiting the canal, and \$12 in smaller quantities or to vessels not transiting the canal; February 1, 1922, \$10 to vessels taking 1,200 tons or full bunker capacity of not less than 825 tons, and \$12 for smaller quantities. At Balboa the price of coal has ruled approximately \$3 per ton higher than at Cristobal.

FUEL OIL, DIESEL OIL, GASOLINE.

At the close of the fiscal year 1922 The Panama Canal had 10 oil storage tanks on the Isthmus with an aggregate capacity of 451,393 barrels, and 8 private companies owned 21 tanks with an aggregate capacity of 1,034,640 barrels. Oil for all interests was handled through the Panama Canal pipe lines and by the canal's pumping plants. New tanks are now being erected by the West India Oil Co. and by the United States Navy, which will increase total storage capacity to 1,726,041 barrels for fuel oil, 59,992 barrels for Diesel oil, and 60,786 barrels for gasoline.

The oil and gasoline business of the year is summarized in the following table:

	Balboa.	Mount Hope.	Total.
Fuel oil sold to steamships by Panama Canal, in barrels.....	4, 134	9, 205	13, 309
Fuel oil sold to steamships by companies, in barrels.....	581, 714	1, 907, 502	2, 489, 216
Number of ships:			
By Panama Canal.....	52	62	114
By companies.....	285	1, 086	1, 371
Bulk gasoline sold to steamships by Panama Canal, in gallons.....	11, 693	25, 079	36, 772
Number of ships by Panama Canal.....	13	22	35
Diesel oil sold to steamships by Panama Canal, in barrels.....	20	561	581
Diesel oil sold to steamships by companies, in barrels.....	69, 489	0	69, 489
Number of ships by Panama Canal.....	1	19	20
Number of ships by companies.....	74	0	74

The Panama Canal lost on oil sales \$36,992.43, due to the fact that price for fuel oil during the year has been maintained at a little less than cost in order to dispose of high-priced oil on hand. The oil companies are selling their oil at prices materially lower than the present stock value of Panama Canal fuel oil; but the loss on sales was offset by the profit made on pumping and handling oil for the companies. The net profit on all oil business was \$34,882.18.

SHIP CHANDLERY AND OTHER SUPPLIES—STOREHOUSE OPERATIONS.

As in the preceding year, the main stock of material and supplies was carried in the general storehouse at Balboa, but for convenience and economy of operation a smaller storehouse was maintained at Cristobal, and a storehouse was continued at Paraiso primarily for the dredging division. Material was issued as needed to the various departments of The Panama Canal and the Panama Railroad, and sales were made to the Army and Navy, to vessels using the canal, and to individuals and companies on the Isthmus.

At the beginning of the year, owing to the cessation of construction work and to the curtailment of sales resulting from the general business depression, the storehouses were overstocked with materials purchased at boom prices, and efforts were directed mainly toward cutting down the inventory. This was reduced 35 per cent, as follows:

On hand June 30, 1921, exclusive of obsolete material and scrap.....	\$8, 106, 269. 70
Received during the year.....	4, 562, 899. 69
Total.....	12, 669, 169. 39
Issued during the year.....	7, 422, 807. 49
On hand June 30, 1922.....	5, 246, 361. 90

Sales to steamships aggregated \$116,740.85, local sales \$202,859.50, and so-called credit sales, which include material issued on foreman's orders for the Army and Navy and for jobs ordered by individuals

and companies, \$1,212,876.83, or a total of sales from the storehouses to other than The Panama Canal and Panama Railroad of \$1,532,477.18. As the corresponding figure for 1921 was \$2,040,477.12, this outside business has fallen off approximately 25 per cent.

Obsolete and surplus material offered for sale in the United States by competitive bid realized gross proceeds of \$177,627.98. American scrap was issued or sold to the value of \$11,958.34.

HARBOR TERMINALS.

There was less cargo handled over the docks at Cristobal and Balboa by the receiving and forwarding agency of the Panama Railroad Co., and the revenue from this source shows a corresponding reduction, as compared with the fiscal year 1921; but heavy reductions of force and economy in operation resulted in a favorable showing. The following table summarizes the work of the two last years:

	1922	1921
Tons of cargo stevedored.....	313,702	442,756
Revenue per ton stevedored (average).....	\$0.4925	\$0.4532
Cost per ton stevedored.....	\$0.3114	\$0.5327
Tons of cargo handled and transferred.....	830,134	1,109,726
Revenue per ton handled (average).....	\$0.9893	\$1.0095
Cost per ton handled.....	\$0.7328	\$0.8589
Gross operating revenue.....	\$1,156,566.43	\$1,505,810.95
Gross operating expense.....	\$883,384.65	\$1,528,689.51
Net revenue.....	\$273,181.78	¹ \$22,878.56
Per cent of expense to revenue.....	76.37	101.52

¹ Loss.

The revenue in 1922 was \$1,156,566.43, or \$349,244.52 less than in 1921. The cost of operation was \$883,384.65, or \$645,304.86 less than in the preceding year. The net result in 1922 was a gain of \$273,181.78, as compared with a loss of \$22,878 in 1921.

The following table shows the distribution of business between the two ports:

	Balboa.	Cristobal.
Number of ships discharging cargo.....	403	1,215
Tons of cargo received (ex cargo).....	44,848	430,841
Number of ships taking cargo.....	256	1,212
Tons of cargo delivered (per cargo).....	16,568	315,640
Tons of cargo stevedored by Panama R. R. Co.....	22,692	291,010
Tons rehandled by Panama R. R. Co.....	5,041	17,196

COMMISSARY SYSTEM.

The commissary system (Panama Railroad), consisting of purchasing agencies, wholesale units, seven manufacturing plants, nine retail stores, two electrical refrigerating plants and an industrial laboratory, was continued for account of the Panama Railroad Co. but under the supervision of the chief quartermaster of The Panama

Canal. The receipts from the sale of commissary supplies amounted to \$6,966,376.63, a decrease of \$4,145,957.66 as compared with the previous year. The business loss, after writing down the value of beef in cold-storage and other supplies on hand at the close of the year was \$241,992.35. The loss on sales was approximately 3.5 per cent.

Purchases.—The greater part of the stock was purchased in the United States, with the exception of meats, and the goods were sold at a price that represents the cost laid down on the Isthmus plus a surcharge based on the cost of handling and retailing. The following statement shows by classes the value of supplies on hand at the beginning of the year, the amount purchased during the year, and the value remaining on hand at the close of the year:

	On hand June 30, 1921.	Purchases.	On hand June 30, 1922.
Groceries.....	\$190,251.19	\$1,038,385.48	\$158,339.40
Hardware.....	116,845.47	204,580.94	91,453.52
Dry goods.....	735,553.47	430,002.50	328,868.99
Boots and shoes.....	289,828.50	116,959.23	126,146.34
Cold storage.....	118,681.08	920,989.32	61,277.05
Tobacco.....	27,134.74	278,910.18	17,857.89
Raw material.....	503,299.42	¹ 1,494,072.01	327,199.75
	1,981,593.87	4,483,899.66	1,111,142.94

¹ Includes cattle, hogs, poultry, and milk in amount of \$970,472.15.

Purchases were made as follows: United States, \$3,165,759.09; Europe, \$101,217.49; Central and South America, \$52,978.91; cattle industry, \$892,195.84; local purchases, \$135,339.83; Panama Canal, \$136,408.50; total, \$4,483,899.66.

Sales were made as follows:

	1921	1922	Decrease.
To United States Government.....	\$1,726,682.50	\$1,219,544.76	\$517,137.74
Panama Canal.....	1,568,167.58	983,585.88	584,581.70
Steamships.....	949,390.29	359,769.69	589,580.60
Panama R. R. Co.....	348,485.58	215,697.09	132,788.49
Individuals and companies.....	313,845.66	323,417.21	¹ 9,571.55
Employees.....	6,414,813.91	4,000,950.83	2,413,863.08
Gross revenue from sales.....	11,331,375.52	7,102,985.46	4,228,390.06
Less discounts and credits.....	219,041.23	136,608.83	82,432.40
Total.....	11,112,334.29	6,966,376.63	4,145,957.66
Supplies for expenses and equipment:			
Retail commissaries and warehouses.....	149,698.23	102,288.16	47,410.07
General.....	705.60	737.19	¹ 31.59
Plants.....	110,336.57	77,553.10	32,783.47
Total.....	260,740.40	180,578.45	80,161.95
Loss by condemnation, shrinkage, etc.....	145,624.71	66,017.98	79,606.73
Loss by clerical errors, pilfering, etc.....	21,341.68	41,194.45	¹ 19,852.77
Total.....	166,966.39	107,212.43	59,753.96
Grand total.....	11,540,041.08	7,254,167.51	4,285,873.57

¹ Denotes increase.

The commissary investment proper (exclusive of plantations, cattle industry, dairy and hog industries) amounts to \$3,848,892.30, as follows: Commissary plants and stores, \$2,074,234.19; equipment, \$113,515.17; supplies on hand, \$1,111,142.94; floating capital, approximately \$550,000. The amount of accrued depreciation set up is \$407,089.35, and the total profits from August, 1905, to June 30, 1922, amount to \$1,255,645.51.

Meat industry.—The importation of Colombian beef cattle, which was discontinued in the last fiscal year, was resumed in September, 1921, and 5,000 head of cattle at a cost of \$330,611.26 were brought in to complete an open contract. These cattle were purchased at a cost of 6.6 cents per pound, transportation charges being paid by the contractor. The total number of cattle handled during the year was 21,000, with only 193 deaths, the average death rate being 0.9 per cent. Only 3 deaths occurred from anthrax, and these were among cattle imported from Colombia in September, 1921.

The area of the pastures remained practically the same as in the previous year. No new clearing was undertaken, but 12,864 acres were recleared.

The steamship *Caribbean*, the service of which had been extended to include commercial cargo in May, 1921, was continued in the east Colombia service as a feeder for the steamship line until the open cattle contract was completed in June, 1922, when she was withdrawn from the service and replaced by the steamship *Advance*.

During the year 7,567 head of cattle were sold to the commissary or to individuals and companies. The revenues received from the sale of cattle and hides amounted to \$751,967.83. Operating expenses amounted to \$170,831.29. The net revenue of the year from operation was \$143,103.55; but the value of fat and lean cattle on hand at the close of the year, which had been carried at \$85.28 and \$54.43 per head, respectively, was written down to the estimated cost of replacement, \$45 and \$23 per head, a reduction of \$502,528.64, making a net loss of \$359,425.09.

The following is the present investment in the beef cattle industry: Pastures and buildings, \$716,761.39; equipment, \$7,749.25; other material, \$640.79; horses and mules, \$18,607.46; cattle on hand June 30, 1922, \$547,891.88.

Plantations.—The contract system of running the plantations was extended during the year to include Limon and the remainder of the small farms, so that on June 30, 1922, the only plantations under direct operation were at Frijoles and Juan Mina. At Frijoles 17,000 alligator pears were gathered, with many new trees coming into bearing. At Juan Mina 32,500 grapefruit, 155,800 oranges, 2,500 lemons, and 2,800 limes were gathered. The launch service on the Chagres River has been discontinued, and only ordinary maintenance

work done. The operation of the Chinese gardens at Summit was discontinued and the gardens let out under contract on a rental basis. The operation of the hog farm and the poultry farm was discontinued toward the close of 1921, and both units were let out under contract on a rental basis. The hog farm continues to operate, but the poultry farm contract has been abandoned.

HOTELS AND RESTAURANTS.

The new accounting system introduced January 1, 1922, involved placing the employees' restaurants on an entirely self-supporting basis, which increased the operating cost to such an extent that it brought about their lease to a contractor, effective May 1, 1922. Under the lease a rental is paid which covers the exterior maintenance of the buildings and partly pays the interest and depreciation charges, whereas under government operation running expenses were greater than the receipts.

The Hotel Tivoli and the Hotel Washington were also advertised for lease, but the bids received were unsatisfactory and were rejected. For the time being these two hotels are retained under the management of the supply department.

BUILDING CONSTRUCTION AND REPAIRS.

The construction work for the fiscal year was considerably less than in past years, although general repairs to buildings about equaled those of other years.

United States Army.—The building construction for the Army amounted to \$28,023.83, for which two one-family commanding officers' quarters were built at Fort Clayton and Fort Davis.

United States Navy.—One two-family quarters under construction at Balboa Radio Station, which expenditure to date amounts to \$5,122.45.

Repairs.—Repairs and alterations to chill rooms at cold-storage plant, Mount Hope, amounted to \$17,931.87. This was the most important job of the year. The jobs done for the canal and railroad did not in any individual case exceed \$4,000. These jobs consisted principally of the upkeep of employees' quarters and other buildings and miscellaneous jobs done for departments and divisions.

PRINTING.

The total value of printing and binding at The Panama Canal Press and of stationery sales was \$258,619.47, as compared with \$400,377.51 for the previous fiscal year, a decrease of 35 per cent. There has been a corresponding reduction of the force employed. At its peak during the fiscal year 1921 it numbered 17 gold and 132 silver employees.

At the close of the fiscal year 1922 it was 9 gold and 78 silver employees. Report is made each quarter to the Joint Committee on Printing, and all of the plans of that committee to promote economy in public printing have been followed here.

PANAMA RAILROAD.

The actual business transacted by the railroad proper shows a marked decrease both in tonnage and passengers transported, with a corresponding decrease in revenues, as compared with the preceding fiscal year; but heavy reductions in force, the retirement of a large number of locomotives and other equipment from active service, and the closing of several stations, combined with a reduced train service, resulted in a very favorable showing. The net revenue for the year amounted to \$165,632.25, as compared with a loss of \$156,713.23 for the fiscal year 1921.

The railroad maintained 183.64 miles of track, of which 115.25 were in main line and sidings, 58.19 miles in Panama Canal track, and 10.20 miles in track of the United States Army.

The stations at Mount Hope, Fort Davis, Frijoles, and Summit were closed on account of decreased business or reduction of force.

The total freight carried both ways was 208,015 tons of 2,000 pounds or 40 cubic feet, as compared with 321,031 tons in the previous year, and the average revenue per ton was \$3.99, as compared with \$3.24 in the previous year. Revenue freight amounted to 205,785 tons, a decrease of 110,451 tons, as compared with 1921; local commercial freight decreased 8,404 tons; Panama Canal freight decreased 81,694 tons; transit freight increased 504 tons; and Army and Navy freight decreased 15,078 tons.

The following statement shows the number of passengers carried and the passenger revenue for the fiscal year 1922 as compared with the fiscal year 1921:

Classification.	Number of passengers carried.		Passenger revenue.	
	1922	1921	1922	1921
First-class passengers.....	287,463	469,033	\$229,842.40	\$382,012.33
Second-class passengers.....	449,502	775,302	196,522.74	301,451.33
Total.....	736,965	1,244,335	426,365.14	683,463.66

The average revenue per passenger per mile for 1922 was \$0.0251 and for 1921, \$0.0329. The gross revenue from transportation of passengers shows a decrease of \$257,098.52, and the number of passengers carried shows a decrease of 507,870.

The following table contains a summary of the operating statistics of the railroad for the fiscal years 1922 and 1921:

	1922	1921
Average miles operated.....	47.61	51.45
Gross operating revenue.....	\$1,552,400.54	\$2,242,021.69
Operating expense.....	\$1,380,768.29	\$2,398,734.92
Net operating revenue.....	\$165,632.25	¹ \$156,713.23
Per cent of expenses to revenue.....	89.33	108.99
Gross revenue per mile of road.....	\$32,606.60	\$43,576.71
Operating expenses per mile of road.....	\$29,106.64	\$46,622.64
Net revenue per mile of road.....	\$3,499.96	¹ \$3,045.93
Revenue per passenger train-mile.....	\$4.29	\$4.84
Revenue per freight train-mile.....	\$8.82	\$10.03
Total revenue train mileage.....	192,112	260,428
Railroad revenue per train-mile.....	\$8.27	\$8.61
Railroad operating expenses per revenue train-mile.....	\$5.41	\$9.21
Net railroad revenue per revenue train-mile.....	\$0.86	\$0.60
Tons per loaded car.....	11.09	10.02
Tons per train.....	121.94	129.39
Freight, passenger, and switch locomotive mileage.....	274,894	369,066
Work-train mileage.....	38,858	110,050
Passenger-train mileage.....	99,430	158,108
Freight-train mileage.....	92,682	102,240

¹ Loss.

TELEPHONES.

During the year 490 telephones were installed and 1,065 removed, leaving a total of 2,417 in service at the end of June, 1922. Calls during the eight-hour business day averaged 22,174, as compared with 28,809 in 1921. The system now includes 36 miles of pole line, 249 miles of underground circuit, 135 miles of cable, 13,728 miles of wire, 960 miles of phantom circuits, 276 miles of simplex circuits, 26 manual and 3 automatic exchanges. The telephone system is owned by the Panama Railroad Co., but operated by the electrical division of The Panama Canal.

LAND AND BUILDINGS.

The revenue credited to rentals from lands of the Panama Railroad Co. amounted to \$129,104.73. The expenses in connection with land leases were \$18,900.62, leaving a net revenue of \$110,204.11, which is an increase of \$2,381.07 over the previous year. Rentals from buildings not used in the operation of the railroad amounted to \$14,344.67, and the expenses to \$15,598.77, leaving a net loss of \$1,254.10, as compared with a profit of \$7,227.07 for the fiscal year 1921.

In March, 1922, the capital investment in railroad real estate, estimated at \$2,162,354.95, was raised to \$6,749,735.75, based on the numerous improvements in Colon and Panama lands. The value of various capital assets constructed during the period of high prices for material and labor was reduced to the estimated cost of replacement under normal conditions, and the value of other units which had outlived their usefulness was removed from the capital

account. The net reduction in railroad capital assets amounted to \$2,113,428.04, and the principal items consisted of assets to the value of \$1,892,316.33 returned to The Panama Canal and \$206,943.31 charged to accrued depreciation. The following list covers the principal items that were reduced in value or removed, and their value written off to the increase in real estate:

Railroads and appurtenances.....	\$1, 892, 844. 67
Docks, piers, and appurtenances.....	347, 430. 46
Harbor terminal equipment.....	142, 737. 28
Coal plants.....	140, 805. 31
Farm industries.....	600, 239. 75
Commissary plants and stores.....	820, 982. 19
Buildings and other structures.....	108, 827. 24
Railroad equipment.....	71, 397. 90
Concrete dock, Balboa.....	373, 742. 10
Cristobal roundhouse.....	42. 500. 00

CLUBHOUSES.

The Panama Canal assumes overhead expenses of the various clubhouses for gold and silver employees to the amount of \$150,000 a year. The reasons for this are dealt with briefly in Section IV of this report. Excluding this overhead expense, the income of the clubhouses amounted to \$483,848.71 and the expenditures to \$442,205.99. The principal sources of income were cigars and candy, soda fountains and lunchrooms, and moving pictures. At the end of the year the clubhouses had an accumulated cash surplus of \$114,521.56.

PANAMA RAILROAD STEAMSHIP LINE.

The gross revenue of the steamship line for the fiscal year ended June 30, 1922, was \$2,862,898.57 and the operating expenses were \$3,450,231.02, leaving a net deficit of \$587,332.45. This deficit, as compared with that for the fiscal year ended June 30, 1921, of \$700,810.22, shows a decrease in deficit of \$113,477.77.

Briefly, the principal causes contributing to the deficit were:

1. The tonnage carried amounted to 252,866 tons, as compared with 415,159 tons for the previous year, a decrease of 162,293 tons, or 39 per cent.
2. The marked lowering of rates caused by the keen competition by direct lines operating between South Pacific and Caribbean-Colombian ports and New York.
3. The continued depression in business conditions throughout the world.
4. While there has been a slight reduction in the cost of foodstuffs, stores, and supplies during the operating year, they were in the main maintained at the high mark established during the prior fiscal year.

5. The unsettled exchange conditions and the curtailment of credit of American merchants to South American merchants have greatly reduced imports into the United States and influenced the purchase of their requirements in Europe.

The reduction in deficit as compared with that of the previous fiscal year, despite the large falling off in tonnage transported, is due not only to the fewer ships operated but to the economies effected, particularly in pay rolls, rentals, etc.

The deficit includes, in addition to current operating expenses, depreciation and deferred charges for general and extraordinary repairs incurred in prior years. By eliminating depreciation and deferred charges for extraordinary repairs the deficit would have been reduced to \$275,427.36.

SECTION III.

GOVERNMENT.

The usual functions of government are carried out in the Canal Zone through the health, municipal, and executive departments; but in addition all of the accounting work is done in the accounting department, while, aids to navigation, steamboat inspection, and hydrographic and meteorologic work, commonly considered government duties, are here associated with canal operation. The cost of government is merged with that of administration, and as close a division as can be made is found in the statement of working forces by canal operation, business operation, and government in Section IV of this report. From the general financial statements may be obtained the data of cost and revenue of various branches.

POPULATION.

A census of the civil population of the Canal Zone was taken by the police force during the month of June, a summary of which is given below:

	Americans.					All others.					Total.
	Total men.	Em- ploy- ees.	Total women.	Em- ploy- ees.	Chil- dren.	Total men.	Em- ploy- ees.	Total women.	Em- ploy- ees.	Chil- dren.	
Balboa district.....	1,539	1,375	1,762	241	1,863	3,246	2,267	2,232	73	3,874	14,516
Cristobal district.....	507	474	597	28	618	2,580	2,328	1,649	5	3,084	8,985
Prisoners.....	17	.....	.....	.....	.....	151	.....	2	.....	.....	170
Total.....	2,063	1,849	2,359	269	2,481	5,977	4,595	3,883	78	6,908	23,671

¹ Includes 226 civilian employees of the Army and Navy.

In addition to the civilian population the military population of the Canal Zone in June, 1922, numbered 8,348.

PUBLIC HEALTH.

The health department has continued to follow the established policy of some years past of reducing the cost of sanitation by close attention to and supervision of details and the substitution of tried and proved economies developed by experience. Rock and tile subsurface drains are being installed in areas once controlled by open ditches that require frequent grading, grass cutting, and oiling. In addition to the actual elimination of large areas formerly maintained

by temporary but expensive measures, the health department has been enabled to drain other large mosquito-producing areas lying outside these formerly sanitated areas, which recent carefully made observations proved were sending many anopheles mosquitoes into the towns, especially on the Atlantic side of the Isthmus. The areas near by such residential and industrial sections have always been carefully maintained free from mosquito breeding, and this control has been and is being extended outward as observation and study indicate the need therefor. Economies have resulted also from improved methods in the use of oil and other larvacides; and changes in various other phases of sanitation on the Canal Zone and the cities of Panama and Colon (especially in the methods of garbage collection and disposal, street cleaning, inspections, etc.) have resulted equally favorably. Whereas on June 30, 1919, there were employed in the above activities 20 sanitary inspectors, 2 incinerator operators, and 571 silver employees, on June 30, 1922, there were so employed but 10 sanitary inspectors and 313 silver employees, with a still greater than proportionate decrease in cost of these activities, yet it is believed that the employees and other residents of the sanitated areas are now better protected from infections than formerly. These changes and other matters relating to health and sanitation have been more fully discussed in the published annual report of the health department for the calendar year 1921.

Malaria.—Conditions with respect to malaria are shown in the following table:

	Rate per thousand per annum among employees.		
	White.	Black.	Total.
Fiscal year 1921:			
July to December.....	18.72	23.37	22.19
January to June.....	20.14	10.84	13.30
For the entire year.....	19.39	17.65	18.10
Fiscal year 1922:			
July to December.....	15.57	17.54	17.04
January to June.....	16.02	12.62	13.54
For the entire year.....	15.78	15.25	15.39

Canal Zone.—The average population (civil and military) for the fiscal year 1922 is 30,683, and this has been used as the base for vital statistics. From this population 249 deaths occurred during the year, 216 of which were from disease, giving a rate of 7.04 for disease alone, as compared with 7.03 for 1921, and 7.08 for 1920.

The death rate from tuberculosis was 0.65, as compared with 0.78 for the fiscal year 1921 and 0.81 for the fiscal year 1920. Deaths from tuberculosis during the fiscal year 1922 were 8 per cent of all deaths.

The birth rate for the year was 24.87 per thousand population. The infant mortality rate, based on the number of births reported for the year, was 46.26 for white and 124.48 for black children, with a general average of 96.99. Of the total births reported, 4 per cent were stillbirths. Of the total deaths reported, 43 per cent occurred among children under 5 years of age. The maternal mortality rate (from conditions due to the puerperal state) was 2.52 per 1,000 births.

Panama.—The estimated average population for the city for the year was 60,500, a new census not having been taken during the year. From this population 1,375 deaths occurred during the year, of which 1,340 were from disease, giving a rate of 22.15 for disease alone, as compared with 19.52 for the preceding year. Tuberculosis gave a death rate of 3.83, as compared with 3.26 for 1921 and 3.80 for 1920; this was 17 per cent of the total deaths, as compared with 16 per cent for the fiscal year 1921.

The principal causes of death, compared with last year, were as follows:

	Number of deaths.	
	1920-21	1921-22
Tuberculosis (various organs).....	197	232
Pneumonia (broncho and lobar).....	162	225
Diarrhea and enteritis.....	178	176

There were 2,160 live births reported for the year, giving a rate of 35.70. The infant mortality rate, based on the above number of births reported, was 165.28. Of the total number of births reported, 6 per cent were stillbirths. Of the total deaths reported, 39 per cent occurred among children under 5 years of age. The maternal mortality rate (from conditions due to the puerperal state) was 6.52 per thousand births, stillbirths included.

Colon.—The population of the city for the year averaged 31,500, as compared with 26,078 for 1921. From this population 457 deaths occurred during the year, of which 434 were from disease, giving a rate of 13.78 for disease, as compared with 18.63 for the preceding year. Tuberculosis gave a death rate of 2.22; this was 15 per cent of the total deaths.

The principal causes of death, as compared with last year, were:

	Number of deaths.	
	1920-21	1921-22
Tuberculosis (various organs).....	91	70
Diarrhea and enteritis.....	28	46
Pneumonia (lobar and broncho).....	36	32

There were 830 live births reported for the year, giving a rate of 26.35. The infant mortality rate, based on the number of births, was 140.96. Of the total births reported, 7 per cent were stillbirths. Of the total deaths, 39 per cent occurred among children under 5 years of age. The maternal mortality rate (from conditions due to the puerperal state) was 15.77 per 1,000 births, including stillbirths.

Canal hospitals.—Patients treated at Panama Canal hospitals, fiscal year 1922:

Hospital.	Number in hospital July 1, 1921.		Admitted.		Died.		Discharged.		Transferred.		Remaining June 30, 1922.	
	White.	Black.	White.	Black.	White.	Black.	White.	Black.	White.	Black.	White.	Black.
Ancon.....	166	169	3,607	2,993	45	160	3,565	2,813	35	61	128	128
Colon.....	24	18	1,072	1,377	18	67	823	838	231	470	24	20
Corozal:												
Insane.....	96	284	77	110	8	24	74	71	3	8	88	291
Cripples.....	4	26	4	4	.....	.....	2	2	1	.....	5	28
Chronics.....	1	25	3	3	.....	1	2	2	.....	1	2	24
Palo Seco leper colony.	15	69	1	9	.....	8	.....	3	.....	.....	6	67
Total.....	296	591	4,764	4,496	71	260	4,466	3,729	270	540	253	558

¹ Includes 2 Chinese.

In the surgical clinic at Ancon Hospital 1,524 major operations and 3,859 minor operations were performed and 263 obstetrical cases were delivered. In the eye and ear clinic 1,544 refractions were done and 1,346 operations performed, in addition to which 8,716 cases not in the hospital were treated. In the X-ray clinic 2,701 cases were handled, 4,586 plates and 790 films were made, in addition to 1,974 dental films made. In the medical clinic, in addition to the hospital work, 1,971 cases not in the hospital were treated.

Medical storehouse.—On January 1, 1922, the medical storehouse was transferred to the general store of the supply department, Balboa, in order to make additional room for the Ancon commissary. The change has been beneficial to both the health and supply departments, and the delivery of medical supplies to the hospitals and other units of the health department has been satisfactory.

Quarantine.—In the operation of quarantine the aim throughout the year has been to discard those measures which were formerly necessary for the protection of the health of the Canal Zone, but which are no longer needed on account of the improved sanitary conditions in other countries and in the Canal Zone itself. The elimination of yellow fever from the west coast of South America and its almost complete eradication in the Western Hemisphere has made it possible to relax very considerably the quarantine restrictions hitherto imposed. Furthermore, the sanitary conditions within the Canal Zone itself are such that at the present time were a case of

yellow fever in the infectious stage to be introduced it would hardly be possible for it to spread to other persons.

Since The Panama Canal is operated for the purpose of saving time for vessels, it is felt that every safe means which will augment this saving should be put in force, and quarantine operations are therefore limited to only the absolutely essential things so that the movement of ships may be facilitated and the annoyance to passengers and hindrances to commerce shall be reduced accordingly. To this end radiopratique for merchant vessels was instituted by the following Governor's Circular No. 626-10, issued February 17, 1922:

Hereafter ships with clean bills of health, from noninfected ports and without sickness on board, intending to transit the canal without taking supplies or stores of any kind or landing passengers or cargo, may be granted pratique by radio under the following conditions:

(a) By making application therefor by radio between the hours of 8 a. m. and 4 p. m. Such application to state -

1. That the vessel has a clean bill of health and has no sickness on board.
2. Names of ports and places visited within the past 10 days.
3. That the vessel intends to transit the canal without taking stores of any kind or landing passengers or cargo.

(b) Radio will be addressed to chief quarantine officer through port captain.

(c) Pratique will not be considered as granted until reply has been received from port captain: "Chief quarantine officer grants pratique."

In consonance with the general policy outlined above, the quarantine station at Bocas del Toro was closed, effective November 1, 1921. The chief quarantine officer made a visit to the Republic of Venezuela for the purpose of determining whether or not it would be safe to raise the quarantine which for many years has been in effect against that Republic. This official reported that on account of very notable sanitary improvements which had been made in that country it was safe to do this, and the quarantine was accordingly raised.

The yellow fever quarantine restrictions hitherto effective against Nicaragua and San Salvador were also modified, so that passengers from these countries need not now be placed in quarantine to complete six days from the port of departure; all that is necessary at the present time is for the landed passenger to report once daily to the quarantine officer until the completion of the sixth day. This facilitates very greatly commercial and social intercourse with these countries.

The menace of plague still continues, the world-wide distribution of this disease making its further international spread through the agency of ships even more possible than hitherto. It is realized that human beings play a relatively small rôle as the distributors of bubonic plague, and attention has therefore been fixed upon the ship rodent itself. The number of ship fumigations for the purpose of destruction

of rats has therefore been very considerably increased during the past year, and it is noted that invariably after the second or third fumigation few rats are found on these vessels, even though large numbers may have been secured on the first fumigation. This work therefore exercises a beneficial influence not only upon Panama Canal ports, but upon the other ports of the world as well.

With the idea that greater efficiency and a marked economy might be secured, there has been a consolidation of the functions of the two quarantine stations maintained on the Isthmus, that at Cristobal being utilized exclusively as a boarding and fumigation station and that at Balboa as a boarding and detention station. Under this plan it has been possible to close all detention quarters at the Cristobal station, merely holding them in reserve to meet some emergency and utilizing the detention quarters at Balboa station exclusively for this purpose.

If persons arriving at the Atlantic port of the Isthmus are to be quarantined, they are brought to Balboa in the hospital car and transported by ambulance to the Balboa quarantine station. If vessels on the Balboa side require fumigation, they are either fumigated by the trained operatives from the Cristobal side or the vessel is sent through the canal to be fumigated at Cristobal.

A total of 21 cases of smallpox was reported during the year. Ten cases of leprosy were admitted to the Palo Seco colony from Panama, Colon, the Canal Zone, and the interior of Panama. With the two above exceptions, no cases of maritime quarantinable disease originated on the Canal Zone during the year.

MUNICIPAL ENGINEERING.

Water supply.—The pipe lines, reservoirs, filtration plants, and pumping stations were operated and maintained during the year along routine lines, at a direct cost, not including depreciation and interest, of \$468,605.63. (See Table No. 34, Section V.) One new pumping station was installed at Pedro Miguel to supply filtered water to the west side of the canal in place of distilled water formerly used there for domestic purposes. This change was made principally on account of the expense and difficulty of getting a supply of coal to the west side after the removal of the pontoon bridge.

The amount of water consumed was:

	Gallons.
Canal Zone.....	3, 671, 055, 000
Panama.....	1, 060, 754, 000
Colon.....	639, 157, 500
Sold to ships.....	121, 062, 293

Sewers.—No unusual conditions were encountered during the year in the maintenance of the sewer system. To take care of surface

water during periods of heavy rainfall, for which existing lines proved inadequate, a 24-inch sewer line 228 feet long was installed near Garage 812 at Balboa, and a 2,037-foot line was installed near the Balboa freight yards. The sum of \$18,130.27 was spent on the maintenance and repair of sewer systems in the Canal Zone, not including depreciation and interest. (See also Table No. 21, Section V.)

Roads, streets, and sidewalks.—A number of macadam roads in the Canal Zone are becoming increasingly expensive to maintain, and the resurfacing of a few of the worst of them was authorized during the year. Concrete sidewalks were constructed at four points in Ancon and Cristobal, where both pedestrian and vehicular traffic is heavy, and under former conditions there was serious danger of accidents. The maintenance and repair of roads, streets, and sidewalks, exclusive of depreciation and interest, cost \$80,701.55. (See also Table No. 21, Section V.)

Garbage disposal.—The incinerator at Mount Hope was operated during the year at a cost of \$21,938.53 for the disposal of garbage from the Atlantic side area, including Colon. The incinerator at Balboa was not operated, the garbage from Ancon, Balboa, and Panama being dumped on waste land and buried by the health department.

Cities of Panama and Colon.—The revenue received from the sale of water in Colon during the year was in excess of the combined maintenance, interest, and repayment costs, and the surplus was used for concreting a few of the worst macadam streets in the city at a cost of \$25,561.59. In Panama the revenue from water rentals was insufficient to cover the combined charges, and a deficit of \$22,677.08 was incurred, which added to the deficit of previous years made a total of \$95,950.24. As a result of continued deficits it was necessary to cut maintenance work in the city to an absolute minimum, and many repairs were neglected, which, if final economy had been the only consideration, should have been attended to. (See Table 21, Section V.)

PUBLIC ORDER.

In spite of the mixed population of the Canal Zone and the constant flow of transients of all nationalities, a high standard of public order has always been maintained. This was notable during the fiscal year 1922. The number of felony cases was unusually low, and the total arrests were only 3,372, as compared with 4,941 in 1921.

The police force was reduced from 178 to 171 men. No changes were made in the organization of the force or in the location of existing police stations, and no new buildings were constructed during the year.

A monthly average of 74 prisoners served sentences in the common jails, and all those physically able were employed in clearing trails, road repairs, and other municipal improvements and on janitor work around the police stations. The total value of the labor performed by these prisoners amounted to \$22,868.43.

There were three homicides during the year, of which one was the case of an escaped convict, shot while resisting recapture, and another that of a colored servant at France Field, killed by a stray bullet fired by a hunter on the opposite side of the bay. Four suicides were reported.

There were six arrests under the opium and drug acts, and both the local traffic in narcotics and the smuggling of opium through the Canal Zone were effectually discouraged.

A continuous patrol of the harbors of Balboa and Cristobal was maintained, principally for the enforcement of the navigation laws and for the prevention of smuggling and irregular traffic. A launch patrol was also maintained on the Chagres River and Gatun Lake. Details of police were continued at all the locks. Motor-cycle patrols for the enforcement of vehicle traffic regulations and emergency police service were continued at Balboa and Cristobal.

The more common causes of arrest were: Violation of motor-vehicle regulations, with 989 cases; immigration regulations, 347; disorderly conduct, 342; loitering, 304; disorderly conduct (liquor), 188; petit larceny, 180; assault and battery, 96; held for naval authorities, 88; trespass, 73; violation of national prohibition act, 57; gambling, 55.

The persons arrested included natives of 67 different countries or colonies: Among others, 851 Americans, 626 Jamaicans, 415 Barbadians, 412 Panamans, 142 Colombians, and 79 Spaniards.

Among the 94 occupations represented, the most common were: Chauffeurs, 929; laborers, 394; soldiers, 333; sailors and seamen, 236; ships' firemen, 184; and domestics, 83.

At the Canal Zone penitentiary at Gamboa 61 convicts were received and 70 were discharged, leaving 81 in confinement at the end of the year. The convicts were employed on roads and municipal improvements, the maintenance of the penitentiary buildings and grounds, the manufacture and repair of prison clothing, and the cultivation of the penitentiary farm, where convicts raise a large part of their own food. The total value of the labor performed by convicts at standard rates of pay was \$30,848.62 and the total cost of subsisting, guarding, and clothing them was \$38,146.83.

New buildings for the housing of convicts and warders have been needed for some years, but no funds have been available for their construction.

OFFICE OF DISTRICT ATTORNEY.

The district attorney prosecuted 245 criminal cases before the district court, with 176 convictions, 17 acquittals, 29 cases dismissed, and 23 cases otherwise disposed of. This is a reduction of more than 50 per cent in the number of cases handled, as compared with the previous year, which the district attorney attributes to decreased population, the discouragement of appeals from the magistrates' courts, and the imposition by the district court of sentence commensurate with the crimes charged.

In addition to the cases mentioned above, 32 other criminal cases were pending at the close of the fiscal year, there having been no session of the district court since May 22, 1922.

The district attorney represented The Panama Canal or the Panama Railroad Co. in 11 civil actions and The Panama Canal or the United States Shipping Board in 3 admiralty cases. There were 3 additional admiralty cases pending at the close of the year.

DISTRICT COURT.

The district court held sessions at Ancon and Cristobal and transacted the following business:

Cases pending at the beginning of the fiscal year: Civil, 101; probate, 150; criminal, 44. Cases filed during the year: Civil, 50; probate, 155; criminal, 179. Cases settled during the year: Civil, 72; probate, 168; criminal, 194. Cases pending at the end of the year: Civil, 79; probate, 137; criminal, 37. Of the civil cases settled, 30 were decided, 41 dismissed, and 1 venued. Of the criminal cases settled, 14 were acquitted, 134 convicted, 15 were nol-prossed, 27 dismissed, 3 filed away, and 1 forfeited. Number of sessions of court, 101; number of marriage licenses issued, 616; number of deeds recorded, 22; total collections, \$5,983.05.

Judge Charles Kerr assumed the duties of the office of district judge on July 16, 1921, and left the Isthmus on May 22, 1922, resigning subsequently in the United States. Prior to July 16, 1921, and subsequent to May 22, 1922, there were no sessions of the district court during the fiscal year.

MARSHAL.

Writs of process received, 596; served, 453; parties not found, 143; fees collected, \$236.70; fees paid witnesses, \$86; fees paid jurors, \$5; fees paid interpreters, \$15; trust funds handled, \$123,476.50; attendance at court, 72 days in Balboa and 29 days in Cristobal.

MAGISTRATES' COURTS.

Balboa.—Cases pending at the beginning of the year: Civil, 2; criminal, 1; total, 3. Cases docketed during the year: Civil, 49; criminal, 1,615; total, 1,664. Of the criminal cases disposed of, 65 resulted in acquittal, 1,323 in conviction, 154 were dismissed, and 73 held to the district court. Appeal was taken in 2 civil and 29 criminal cases. Cases pending at the end of the year, 1 civil and 1 criminal. Total collections, \$10,348.96.

As provided for in the Executive order of May 10, 1911, petitions were made to the district judge for the commitment of 55 persons to the insane asylum for observation.

Cristobal.—Cases pending at the beginning of the year: Civil, 0; criminal, 1. Cases docketed during the year: Civil, 29; criminal, 1,314; total, 1,343. Cases disposed of during the year: Civil, 22; criminal, 1,310; total, 1,332. Of the criminal cases disposed of during the year, 187 resulted in acquittal, 967 in conviction, 44 were dismissed, and 112 committed to the district court. Cases pending at the end of the year: Civil, 7; criminal, 5; total, 12. Total collections, \$7,986.49.

FIRE PROTECTION.

No changes were made in the organization or distribution of the fire department, and, with the exception of hose, no new equipment was purchased during the year.

Fire stations were maintained at eight places and four tugs were equipped with fire-fighting apparatus. The paid force on June 30, 1922, consisted of 42 men, distributed: 1 at headquarters, 16 at Balboa, 4 at Pedro Miguel, 16 at Cristobal, and 5 at Gatun. In addition there were 17 volunteer companies, with a total membership of 170.

There were 94 fires during the year, with a total loss of \$75,647, of which \$32,000 represents loss due to a fire in the officers' barracks at the Coco Solo Naval Base and \$22,589.50 the destruction of the United States Army storehouse at Empire. The next largest loss was \$15,600, due to a fire caused by spontaneous combustion in the cargo of the steamship *Iowan*, of the American-Hawaiian Line.

The value of Government property endangered by fires during the year is estimated at \$653,632.19.

PUBLIC-SCHOOL SYSTEM.

Five grade schools and two high schools were maintained for white children and seven grade schools for colored children. The net enrollment in the white schools was 911 boys and 986 girls and in the colored schools 951 boys and 858 girls. Nineteen buildings were used

for school purposes. The number of teachers employed in the white schools at the beginning of the term in October was 79 and in June 77. The number of teachers in the colored schools was 32. Twenty-three pupils graduated from the two high schools, making a total of 200 graduates to date.

It has been the policy to provide for American children educational facilities of the same character as can be found in the best public schools in the United States. Only American teachers are employed, with normal school or college training and previous experience in their work. For the colored West Indian children the curriculum does not extend beyond the grammar-school grades, and West Indian teachers are employed.

During the fiscal year 1922 the status of funds would not permit the making of needed repairs and alterations to buildings, and only emergency maintenance work received attention. In order to curtail expenses pupils were required to provide their own expendable school supplies and railroad transportation, and the amount of janitor service was reduced.

While it has been necessary to practice stringent economies, this this has been done, in general, without impairing the immediate efficiency of the schools. A high standard of pupil instruction has been maintained.

Additional funds are needed to repair and preserve the present buildings and to provide additional classrooms and teachers required in the colored schools.

POSTAL SYSTEM.

Eleven post offices were in operation in the Canal Zone on June 30, 1922, there having been no change during the year in the number or location of offices, but arrangements had been completed to open a new office at Fort Clayton on July 1.

The total receipts of the postal service were \$157,407.85, as compared with \$161,475.13 in the preceding year, a decrease of 2½ per cent. As in former years the Canal Zone postal system would have been self-sustaining, in spite of the very large proportion of mail carried without revenue under the official frank, if it had not been necessary under the Taft agreement to purchase all stamps from the Republic of Panama at 40 per cent of their face value.

Money orders were issued to the value of \$2,642,480.25, on which fees amounting to \$9,153.10 were collected. Of these orders \$862,880 represent so-called deposit money orders, which are issued here without fee in lieu of postal savings certificates and bear interest at the rate of 2 per cent. Deposit money orders were repaid to the value of \$1,045,315, interest payments on money orders totaled \$9,085.58, and the balance on deposit on June 30, 1922, was \$437,200.

Authority was obtained for the sale through the Canal Zone post offices of United States Treasury savings certificates, and they were offered to the public beginning May 1, 1922. Sales during the months of May and June totaled \$89,140, with a maturity value of \$111,425. Because of the higher rate of interest the sale of these certificates has resulted in a decrease in the amount of deposit money orders issued and withdrawal of money order deposits for reinvestment in certificates.

In the registry division of the post offices 234,879 letters and parcels were handled. Of the registered mail dispatched, 42 per cent was official matter registered without fee.

From the exchange office at Cristobal there were 2,243 dispatches of mail to 57 different foreign exchanges, and 1,639 consignments of foreign mail were received. From the Balboa exchange office, which handles mail to west coast Central and South American ports, there were 218 dispatches to 25 different foreign post offices, and approximately the same number of consignments was received.

All United States and foreign closed transit mail destined to the west coast of Central and South America, as well as mail exchanged between Cuba, Jamaica, and other insular governments, with Colombia, Costa Rica, Venezuela, etc., is consigned to or handled under the supervision of the director of posts of the Canal Zone. Arrangements were being made at the close of the year to handle the transit mail of the Republic of Salvador.

CUSTOMS.

The total number of vessels entered at Canal Zone ports was 6,306, and the total number cleared was 6,307, a decline of slightly more than 9 per cent from the figures for 1921. All merchandise discharged at Cristobal or Balboa for local consignees not connected with The Panama Canal, the Panama Railroad, or the United States Army and Navy is in the custody of the Canal Zone customs until submission of the necessary papers from Panaman officials showing that duty has been paid. Permits for 7,476 releases were granted during the year. Free-entry requests submitted by employees and members of the Army and Navy were approved to the number of 1,394. There were no arrests for attempted smuggling, but 8 arrests were made for alleged violations of the opium act and 5 convictions were obtained in the district court. The number of cases of household goods inspected and sealed for employees returning to the United States was 2,329, and the fees collected for this service totaled \$1,617. There were 1,229 commercial invoices certified, for which \$892.50 were collected. The number of vessels requesting the detail of customs inspectors for the examination of passengers' baggage, etc., after the usual working hours at the terminal ports was 399, and a total of

\$3,500 was charged for this special service. Customs inspectors checked Chinese crews upon arrival and before departure to prevent illegal landing of Chinese in the Canal Zone or the Republic of Panama. They also assumed responsibility for 689 Chinese passengers, of whom 161 were admitted to the Republic of Panama on the authority of that Government; 1 died at Ancon hospital, and the remainder, with the exception of 25 held at the close of the year, either proceeded on their journey or were returned to the port of embarkation. Chinese in transit can make arrangements to be released temporarily in the Canal Zone under bond, and 309 such bonds were accepted during the year.

SHIPPING COMMISSIONER—SEAMEN.

The shipping commissioner and his deputies have the same powers with respect to American seamen as shipping commissioners in United States ports or American consuls in foreign ports. During the year there were 3,888 seamen shipped on American vessels and 3,422 discharged. The total amount of wages earned by seamen discharged in the Canal Zone amounted to \$202,758.84, and this was either paid to the seamen or deposited for them with the deputy shipping commissioners. There were 363 American seamen lodged and subsisted at the expense of the Government; of this number 214 were returned to the United States at the expense of the appropriation for the relief of destitute seamen, and for the remaining 149 an opportunity was found to sign on homeward-bound vessels and work their passage. The wages and effects of 9 American seamen who died in Canal Zone hospitals were handled by the shipping commissioner as provided by law.

ADMINISTRATION OF ESTATES.

During the year 85 estates of deceased and insane employees of The Panama Canal and the Panama Railroad Co. were administered and there were 16 estates in course of settlement on June 30, 1922.

RELATIONS WITH PANAMA.

Attached to the report of the executive secretary is a list of the subjects which gave rise to correspondence with the Republic of Panama. They were almost exclusively of a routine nature.

During the month of June, 1922, negotiations, which had for a considerable time been pending, concerning the acquisition by the United States for defense purposes of certain lands and easements or rights of way over and through other property on the island of Taboga were concluded. During the late war it had been planned to take over the whole island, excepting the site of the village, but this

project was opposed by the owners of the land and the Republic of Panama, and it was subsequently abandoned. The area finally acquired comprises only 5.75 hectares on the summit of the highest hill and a tract of approximately the same size on the beach at the spot known as The Cove, together with an easement or right of way for a telephone cable connecting the two tracts.

LAWS AND EXECUTIVE ORDERS.

Laws enacted and Executive orders issued during the year, applicable to The Panama Canal, form Appendix E of the report of the executive secretary. Three volumes containing "The Laws of the Canal Zone," "Treaties and Acts Relating to The Panama Canal," and "Executive Orders Relating to The Panama Canal," annotated and revised to December 31, 1921, were published during the year.

SECTION IV.

ADMINISTRATION.

CHANGES IN ORGANIZATION AND PERSONNEL.

Col. M. L. Walker, United States Army, was appointed engineer of maintenance, effective July 2, 1921, with supervision over the following divisions and sections of the department of operation and maintenance: Section of surveys, division of lock operation, office engineer, section of meteorology and hydrography, division of municipal engineering, Gatun Dam and back fill, and dredging division.

In compliance with directions of the Secretary of War and in order that he might devote more of his time to the duties of a coordinator and business manager, the engineer of maintenance was relieved of direct charge of all these units, except the dredging division, on November 10, 1921, and the other divisions were placed under the supervision of the assistant engineer of maintenance. The duties of the engineer of maintenance were defined in a circular issued November 22, 1921.

Mr. H. A. A. Smith, who as auditor had been in charge of the accounting department since its establishment on April 1, 1914, and who prior to that date had served for several years as examiner of accounts under the Isthmian Canal Commission, tendered his resignation, effective June 18, 1922. To him is due in large measure the change from the accounting system of construction days to the system that was in effect from April, 1914, to December, 1921, and for the changes effected in January, 1922. He remained with the service six months after he had intended to leave only because of his desire to see the new accounting system in use since January, 1922, effectively working before he resigned. I wish to record here my appreciation of his loyal and efficient service. The office of auditor was filled by the promotion of the assistant auditor on the Isthmus, Mr. Elwyn Greene, effective June 20, 1922. The position of assistant auditor on the Isthmus was filled by the promotion of the chief accountant, Mr. W. H. Kromer.

REDUCTION OF FORCE AND REDUCED PAY ROLLS.

The force employed by The Panama Canal and the Panama Railroad Co. on the Isthmus was reduced between June 15, 1921, and June 21, 1922, from 13,600 to 10,176. This reduction was effected

very largely in the first half of the fiscal year and was due in part to the completion of various items of construction work, in part to a falling off in vessel repairs, coal sales, commissary sales, and other business operations and in part to a general overhauling of the organization and the introduction of more economical methods of operation. The reduction extended to all departments, but was heaviest in the mechanical division.

There was a reduction in the monthly pay roll from \$1,374,307.36 in June, 1921, to \$963,229.64 in June, 1922. This reflects not only the simultaneous reduction of force, but reductions in the pay of gold and silver employees, to correspond with wage adjustments in the United States and a lower cost of living on the Isthmus. While the force was reduced 25.196 per cent, the reduction in the monthly pay roll amounted to 29.911 per cent.

The following table shows to what extent the force was reduced in each department and division:

Department or division.	1921			1922		
	Gold roll.	Silver roll.	Total.	Gold roll.	Silver roll.	Total.
Operation and maintenance:						
Office.....	31	50	81	238	37	65
Electrical division.....	197	216	413	141	152	293
Municipal engineering.....	90	760	850	71	664	735
Lock operation.....	175	557	732	163	530	693
Dredging.....	167	755	922	130	597	727
Mechanical.....	645	1,000	1,645	319	553	872
Marine.....	191	518	709	154	390	514
Fortifications.....	61	181	242	39	234	273
Supply:						
Quartermaster.....	279	1,474	1,753	139	897	1,036
Subsistence.....	33	299	332	6	79	85
Commissary.....	239	1,166	1,405	164	742	906
Cattle Industry, plantations.....	19	154	173	6	133	139
Hotel Washington.....	10	81	91	9	83	92
Transportation.....				32	147	179
Accounting.....	226	9	235	190	7	197
Health.....	246	847	1,093	211	705	916
Executive.....	564	258	822	499	243	742
Panama Railroad:						
Superintendent.....	61	332	393	46	221	267
Transportation.....	94	125	219	67	99	166
Receiving and forwarding agent.....	66	687	753	64	625	689
Coaling stations.....	112	566	678	85	515	600
Total.....	3,506	10,085	13,591	2,558	7,623	10,176

FREE QUARTERS PRIVILEGE WITHDRAWN.

On December 3, 1921, the President signed an Executive order directing that on and after January 1, 1922, a charge be made for rent, fuel, electric current, water, and services in connection with quarters occupied by employees of The Panama Canal and the Panama Railroad Co. on the Isthmus. Rental charges were to be fixed on the present depreciated value of the area occupied by the tenant in an amount sufficient to amortize the investment in quar-

ters on the basis of an average life of 36 years, to return 5 per cent for amortization and interest on the investment, and in addition cover the amount fixed for expenditure for repairs due to ordinary wear and tear and for the disposal of garbage and other services necessary from a sanitary point of view.

Under the regulations issued in compliance with this order, ordinary family quarters, with necessary furniture, rent for from \$10 to \$25 a month, and bachelor quarters, including janitor service, for approximately \$9 a month.

The employees applied to the district court of the Canal Zone for an order restraining the Governor from collecting rent charges on the ground that free quarters were a privilege guaranteed them by act of Congress. The court held that it had no jurisdiction, and when an appeal was taken to the United States Circuit Court of Appeals at New Orleans this decision was confirmed. Efforts made by representatives of the employees to have Congress enact a provision restoring the free quarters privilege were also unsuccessful.

The total amounts collected for rentals and allied services from gold employees for the six months of the fiscal year during which such charges were directed by the Executive order referred to were \$207,944.91.

WAGE ADJUSTMENTS—GOLD EMPLOYEES.

The method referred to in my last annual report of adjusting rates of pay on the basis of rates in the United States, to which is added an increment of 25 per cent for service in the Tropics, was continued; and these adjustments were made after consultation with and recommendation by a board on rates of pay, composed of one member representing the administration and one representing the central body of the employees' organizations. The board held 27 meetings.

In instructions under date of October 18, 1921, the Secretary of War stated:

It is believed that the basis as fixed in the law, of not to exceed 25 per cent above rates paid for similar service in the Government service in the United States, may be recognized as fair, and it is directed that it be used for canal and railroad employees. There are certain rates (notably bases fixed for railroad employees, for building-trade rates, and for rates derived from the latter) which are now too high, and for which a new rate should be fixed. In fixing these rates, whether from Government rates or from commercial rates when no Government employment of similar nature can be conveniently found, consideration should be given to the fact that in some sections of the United States where the rate is higher than in other places the hourly rate is fixed on such a basis as to give a suitable wage per year, taking into consideration the fact that inclement weather may close down employment during portions of the year. Similarly proper consideration should be given to a suitable differentiation between maintenance employees and construction employees at the canal, these terms being

used to differentiate those holding reasonably permanent positions from those whose employment may terminate with cessation of a construction job.

It is directed that the bases upon which wages are determined be gone over carefully and that they be readjusted along the lines above indicated.

The foregoing instructions have been complied with. As the trend of wages in the United States has been downward, the numerous revisions which have been made during the year have resulted in practically all cases in lower rates.

WAGE ADJUSTMENTS—SILVER EMPLOYEES.

The wage scale for silver employees is adjusted quarterly to correspond with fluctuations in the cost of living on the Isthmus. The method followed is to ascertain by what percentage current living costs exceed the figures for 1914 and then add the same percentage to the basic hourly rate for common labor, which in 1914 was 12.37 cents. Special hourly rates and monthly rates are adjusted to conform with the basic hourly rate. Fluctuations in the basic hourly rate since February, 1920, are shown below:

Date.	Living costs over 1914.	Indicated rate.	Rate adopted.	Date.	Living costs over 1914.	Indicated rate.	Rate adopted.
	<i>Per ct.</i>	<i>Cents.</i>	<i>Cents.</i>		<i>Per ct.</i>	<i>Cents.</i>	<i>Cents.</i>
Feb. 1, 1920.....	71.58	21.23	21	July 1, 1921.....	68.977	20.91	22
Apr. 1, 1920.....	73.09	21.47	21	Oct. 1, 1921.....	62.59	20.12	21
July 1, 1920.....	87.77	23.18	23	Jan. 1, 1922.....	59.98	19.82	21
Oct. 1, 1920.....	89.12	23.40	23	Apr. 1, 1922.....	55.46	19.24	21
Jan. 1, 1921.....	78.28	22.19	23	July 1, 1922.....	50.039	18.57	20
Apr. 1, 1921.....	72.399	21.33	23				

By strict adherence to the plan adopted in January, 1920, reductions in the pay of silver employees would have been made more rapidly than they have been. A reduction from 23 cents to 22 cents was due on January 1, 1921, and a reduction to 21 cents was due April 1, 1921. No reduction was made, however, until July 1, 1921, when the rate was lowered to 22 cents, and not to 21 cents as was justified by the cost of living data. Similarly a reduction to 20 cents was due October 1, 1921, but the cut was made to 21 cents only. The most recent cut to 20 cents made July 1, 1922, still leaves the rate 1 cent higher than the figure indicated by the statistics. It will be seen that The Panama Canal has not followed the downward trend of living costs exactly, but has withheld reductions six months or more.

GRIEVANCE BOARD.

The board organized in July, 1920, to hear grievances and complaints of American employees on working conditions continued to function during the year. The assistant engineer of maintenance replaced the engineer of maintenance on the board, the other members

being as heretofore the head of the division in which the complaint originates and two representatives of the organized employees. This board held 4 meetings and reported to the Governor in 5 cases. As compared with the previous year, when the board held 35 meetings and considered 32 cases, its work during the fiscal year 1922 was very light.

RECRUITING IN THE UNITED STATES.

The recruiting work handled by the Washington office was light in comparison with former years, as few new employees were needed on the Isthmus. Appointment was tendered to 448 persons, of which number 173 accepted and were appointed. There were 36 different positions to which appointment was made. The ratio of acceptances to tenders of employment was 35 per cent, as compared with 73 per cent in 1921 and 58 per cent in 1920.

NEW LAND POLICY.

Since the depopulation of the Canal Zone prior to the opening of the canal it had been the established policy to reserve the land exclusively for Government use, and no cultivation was permitted except such as was carried on by or under contract with the supply department and such gardening as was done by employees on small plots allotted to them in the vicinity of their quarters. With the reduction of the force employed by The Panama Canal and the Panama Railroad Co. large numbers of idle and destitute West Indians congregated in Panama and Colon. With a view to relieving the distress of these people, increasing the food supply, and creating a local reservoir of unskilled labor that could be drawn upon when needed, it was decided to reopen certain specified areas in the Canal Zone for cultivation under revocable licenses. Applicants for land were assigned up to 5 hectares, rent free until July 1, 1924, after which an annual rental of \$5 a hectare will be collected, and they were given enough secondhand lumber and corrugated-iron sheets to build a small house on each tract. The order relative to these agricultural leases took effect December 2, 1921, and between that time and the end of the fiscal year 1,026 licenses had been issued for a total of 3,138 hectares. The lessees are in practically all cases West Indians who are employed or were formerly employed on the canal. They grew up under rural conditions in their native islands, and have some knowledge of primitive agricultural methods. Plans have been made for the establishment of a model farm in connection with the Canal Zone penitentiary under the management of an expert recommended by the United States Department of Agriculture, who will advise and assist the small cultivators in the development of their 5-hectare tracts.

PUBLIC AMUSEMENTS AND RECREATION.

Five clubhouses for gold and five for silver employees were continued in operation. These clubhouses have long since demonstrated their value as necessary community centers. Most of the activities which they serve are self-supporting, and the contribution made by the canal to the overhead charges is amply justified by the indirect benefits to the Government. The same remark applies with even greater force to the children's playgrounds, athletic fields, swimming pools, and tennis courts which have been constructed and are maintained at but little expense to the canal and to the marked improvement of the physical and moral health of the community.

Supplementing the facilities for recreation provided through the division of clubs and playgrounds, there are many independent organizations which have been built up and are supported by the employees and other residents of the Isthmus, such as the golf clubs at Panama, Fort Amador, Gatun, and Pedro Miguel; the Gatun Tarpon Club; the Balboa-Ancon Gun, Rifle, and Pistol Club; the Tabernilla Hunt Club; and many others. A community house at Balboa was erected last year by Catholic societies and is maintained by them. The Young Men's Christian Association supports clubhouses for the enlisted men of the Army and Navy. The Young Women's Christian Association has two clubhouses for women. The Salvation Army maintains restaurants and lodging houses for seamen. The majority of these organizations are accorded certain privileges in the Canal Zone, although they are not given direct financial support.

SPECIAL PANAMA CANAL COMMISSION.

The special commission appointed by the Secretary of War to investigate the canal administration arrived on the Isthmus on June 18, 1921, one of the members, Mr. H. P. Wilson, arriving a week later. Mr. Molitor left for the United States on July 6, having been here less than three weeks, and the other members of the commission left on July 20, having been here approximately one month, except Mr. Wilson, whose stay was approximately three weeks. The commission submitted its report on September 15, 1921, and I submitted my preliminary comments under date of September 17, 1921. After conference held with the chairman of the commission, in which certain recommendations that were in keeping with my policy were agreed to by both of us, the Secretary of War issued a letter on October 18, 1921, addressed to the Governor, indicating his approval of such recommendations. Under date of January 15, 1922, I submitted detailed recommendations, and, under date of February 6, 1922, the Secretary of War authorized the withholding of further action until after the end of the fiscal year.

Inasmuch as all of the correspondence and data evoked by the investigation of the commission are on file in the Washington office of The Panama Canal, in the office of the Secretary of War, and in the records as well on the Isthmus, and are available to persons legitimately interested in them, only brief reference will be made here to the recommendations and the action taken thereon.

Among the more important matters was the reorganization of the accounting system, to which extended reference is made elsewhere. The charging of rental for quarters occupied by employees and for certain services in connection therewith was begun on January 1, 1922, and the result of the first six months is shown in the financial statements in Section V. The opening of the Canal Zone to settlers who may be available for the labor force was undertaken as indicated in the section on Government in this report. The reduction of stock in warehouses was carried on along the lines that had already been initiated; and the leasing of certain parts of the cattle industry and the canal restaurants was carried out, as indicated elsewhere in this report. It was found impracticable to place sales at the commissaries on a money basis instead of on the coupon basis, and the latter system has been continued. Upon my advice, under date of May 12, 1922, the Secretary of War disapproved the Special Panama Canal Commission's recommendation to the effect that the posts, customs, quarantine, shipping commissioner, and steamship inspection work be divorced from the canal organization and transferred to departments of the Government in the United States. In a more extended report which I submit to you this month the various matters left in abeyance by your letter of October 18, 1921, and your memorandum of February 6, 1922, are referred to in detail.

NEW ACCOUNTING SYSTEM.

[Table references are to Sec. V, p. 55, et seq.]

The accounting system, which had been in use since the opening of the canal in 1914, was so changed during the year as to make it practically a new system.

The old system was a blend of the accounting required by Government regulations and that demanded by the commercial character of the business operations of the canal and railroad. It was devised by Mr. H. A. A. Smith, for many years auditor of the canal and railroad, who was assisted in the work by experts from the Treasury Department. It had been approved by the comptroller. During the fiscal year 1922 a committee from the office of the Comptroller General made an investigation of the old system and in a report dated March 23, 1922, stated—

* * * the system approaches perfection, and the administration thereof has developed it into a smooth-running machine.

INSTRUCTIONS OF THE SECRETARY OF WAR AS TO ACCOUNTING.

From a Government accounting standpoint the old system has never been unfavorably criticized, but from a business standpoint it had certain deficiencies which it is believed are remedied in the new system. The change was made in accordance with the following instructions from the Secretary of War October 18, 1921:

A careful study shall be made of the cost of the canal, in order to establish, if possible, a capitalization to determine a fair commercial value that should be fixed for the canal and its various allied activities. When this has been arrived at, the actual cost of the canal and its activities be written down to this figure, which should thereafter be used in the operation and official reports as capital account upon which returns and expenditures should be justified. Having arrived at this figure, it will be subdivided and an allocation be made to each auxiliary activity under the canal administration, and thereafter the sum allotted to each of these activities shall be the one that must be used in justifying the continued existence of the activity concerned; but in case the operations show a loss, the Governor may present to the Secretary of War a statement of reasons why the activity might be longer continued. There are certain activities, such as sanitation, hospitalization, fire and police protection, and other similar governmental functions, which obviously are not activities from which commercial returns can be expected. These should be attached to canal operations proper and the cost thereof borne by canal operations. By capitalizing the canal and its various subdivisions as therein recommended, it is believed that many desirable results will obtain, for thereafter not only the canal as a whole but each of its auxiliary activities will be given a measure by which the efficiency of its operations should be determined.

* * * In the system of accounting there shall be provision made for a complete and independent showing by each separate business activity throughout the Zone, and invested capital (subject to the revised set-up value as elsewhere directed) shall be set up as a direct charge thereto, the accounts showing the actual results of each unit.

COMMERCIAL VALUE OF CANAL—DIVISION OF CANAL CAPITAL.

The instructions quoted above made it necessary as a first step in reclassifying the accounts to arrive at a commercial value of the canal and its various activities and to divide the canal capital into three classes: First, items considered as national defense expenditures; second, property and equipment used in the operation of the canal proper; third, property used in business operations aside from the transiting of vessels.

The study to determine the commercial value of the canal and its allied activities resulted in the division of capital (see Table 14, Section V) into—

- (1) Canal transit property.
- (2) Canal business property.
- (3) Defense capital expenditures.

Conservative amounts only of the capital expenditures were charged off. The charges to national defense account as of June 30, 1922 (\$110,997,602.38), are detailed in Table No. 15. Some of the items,

such as the payment to the New Panama Canal Company and the Republic of Panama and certain expenditures for projects which were afterwards abandoned, were written to the national defense account in toto. Others were divided between national defense expenditures and the canal commercially and were written off on a percentage basis according to the estimated life of the property—estimating the life of the channels, excavations, fills, and concrete work and the locks and spillways, breakwaters, etc., as 100 years, and other items a lesser life, depending on the nature of the construction.

The commercial value of the canal was thus determined as \$246,418,989.81 for transit capital and \$28,760,308.44 for business capital.

CHART OF NEW SYSTEM—CLASSIFICATION OF ACCOUNTS.

A chart showing the broad outlines of the new system is presented herewith. It will be seen that the accounting of the Panama Railroad on the Isthmus is included, as it was in the old system, because the canal and railroad, while separate legal entities, are so closely linked for practical purposes as to be one large organization. The accounts of the railroad are all handled as "business operations," however, while those of the canal are divided among business and canal transit operations.

It has been necessary to adopt what are practically two independent series of accounts:

(1) A series of accounts showing appropriations, funds, fiscal officers, allotments, and obligations.

(2) A series of general and detail accounts covering property, income, and operations.

This second series of accounts is divided between—

(1) Canal transit operations, which have to do with the transiting of vessels through the canal.

(2) Canal business operations, which are auxiliary to or even independent of canal operations proper and which are to be self-supporting.

APPROPRIATIONS, FUNDS, FISCAL OFFICERS, ETC.

The nature of these transactions is shown by Tables 2 to 13.

CANAL TRANSIT PROPERTY.

This is divided into (1) fixed property (see Table 16) and (2) equipment (see Table 18).

Amortization on canal fixed property, the usable life of which will be considered as 100 years, was written into canal expenses for the fiscal year in a lump sum, as shown in Table No. 25. This

amount is based on a figure of annual amortization which at compound interest at 3 per cent will amortize the investment in 100 years. Items which have an estimated life of less than 100 years were depreciated in a lump sum at a figure which will provide funds for maintaining similar property in a usable condition during the entire life of the canal.

The equipment, with few exceptions, used in connection with the operation of the canal was continued in the accounts at the values placed on the same when it was transferred from the construction accounts to the operation and maintenance accounts or at the values paid for the same when subsequently purchased. Depreciation on this equipment has been charged into the accounts regularly and a reserve established for its replacement. Table No. 18 gives a list of such equipment and the value at which it is carried on the books.

CANAL TRANSIT OPERATION.

The nature of canal transit operations is shown in the chart and in Table 26. The essential feature is that all revenues (such as tolls, taxes, etc.) are turned into the Treasury.

CANAL BUSINESS PROPERTY.

Business property is being depreciated on the basis of its estimated life. Table No. 17 shows the fixed property which is being used in connection with the business operations of the canal. In some cases the book values of business property were not changed, but in the case of the dry docks, and shops, docks, piers and wharves, coaling plants, and employees' quarters rather large amounts are written off to the defense capital account because large expenditures had been made over and above the amounts which it would have been necessary to invest in a plant sufficient for the commercial needs of the canal.

In line with the instructions of the Secretary of War to the effect that each business of the canal should make a showing for itself in the nature of interest on the investment, all of the property—real, personal, and mixed—used in connection with business operations is carried in one account but under separate headings, as shown in Table No. 19.

No separate table has been prepared for the business equipment, as that consists principally of machinery and tools which are not carried in the accounts by name or number. Depreciation on the equipment, both in business and canal use, was continued practically the same as before, and the depreciation reserves were retained in the accounts.

CANAL BUSINESS OPERATIONS.

It has been a difficult matter to prepare a classification of accounts to cover business operations in a commercial way which would comply with the rules and regulations which must be followed in Government accounting. It was necessary to divide the revenue into three classes:

First. Those which affect strictly canal activities in the nature of a reduction in the expenses.

Second. Those which affect the total expenses of canal operations.

Third. Those which are distinctly business revenues.

The first and last are repaid to appropriations and made available for expenditure, and the second are covered into the Treasury as miscellaneous receipts. In the new system only the last of these is considered under the head "Canal business operations." The chart and Table No. 27 indicate the nature of these operations.

While the changes in the capital account of the canal were made as of December 31, 1921, and a number of business divisions started operations under the new scheme as of January 1, 1922, the new classification of accounts did not go into effect until April 1, 1922. At that time the old accounts were written off and new accounts set up. There was no small amount of difficulty in setting up the accounts at the end of nine months of the fiscal year and making the change back to July 1, 1921. However, it was undertaken, and the accounts as they stand on June 30, 1922, are reasonably correct. This change, however, has made it practically impossible to make comparisons with the previous fiscal year, and the financial tables are therefore prepared only for the fiscal year 1922. In such statements as the statement of business expenses, revenues, and profit and loss (see Table No. 27) it must be remembered that the divisions have been operating under the scheme only a few months and that while the rates in some cases were adjusted in January, others were not adjusted until the first of July.

There is shown after each business unit what 3 per cent on the investment would amount to as a comparison with the actual result, but in many cases this is not a fair comparison, for the rates, at least prior to January 1, 1922, were not fixed to produce 3 per cent on the investment. A better showing will be made after a longer period of operations under the new scheme.

INTEREST.

The treatment of interest in connection with the amortization and depreciation reserves caused some complication in canal accounting. The interest accrual will be entirely theoretical, since the canal does not have control of the funds which would ordinarily be set aside by

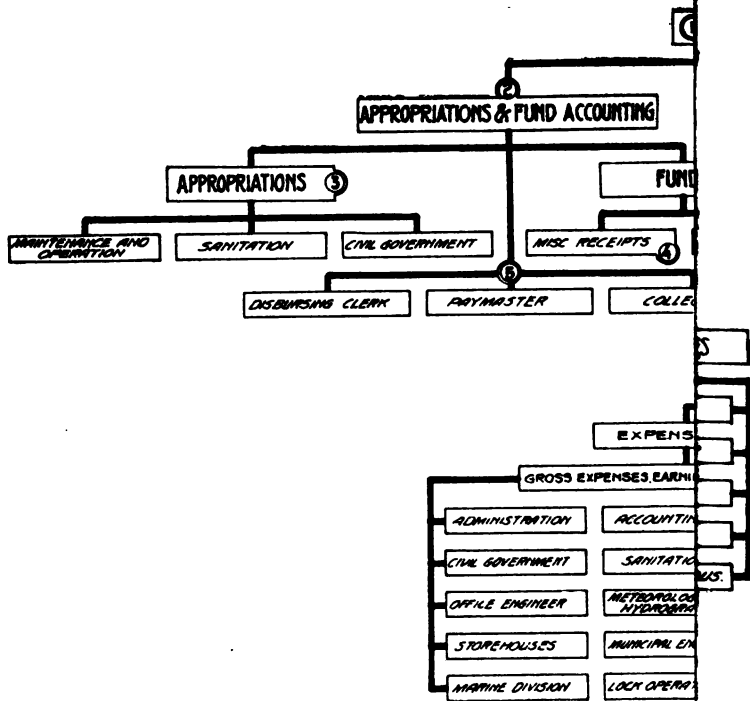
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NOTE: Figures in circles refer to notes on next page

business concerns for accomplishing the purpose for which the charges are made. The United States, through the repayment of amounts covering such charges, is in a position to save the accrual of interest on the funds so repaid; therefore, it seems entirely proper for the canal to take credit for interest on funds theoretically set aside, which funds it could and would set aside if it had control of the same.

CONTINUING APPROPRIATIONS.

I believe that all those who have examined into the financial transactions of the canal will now agree that it is necessary to keep the appropriations of The Panama Canal on a continuing basis and that the reserves which have been built up should be continued as a working fund.

NOTES TO CHART OF ACCOUNTING SYSTEM FACING PRECEDING PAGE.

(1) The Panama Canal is capitalized at \$275,179,298.25, on the proposition that this represents its value as a commercial enterprise. Expenditures in excess of this amount were written off partly as defense capital expenditures and partly in accordance with established methods of depreciation. The question of whether the canal "pays" in the commercial sense will henceforth be answered according as the receipts from all sources pay for all expenses (including depreciation) and in addition 3 per cent (adopted as rate of interest on Panama Canal bonds) on the capital investment. See, however, (12).

(2) This series of accounts deals with funds that are accounted for in the canal transit and business operations accounts. It is required by the Government regulations concerning appropriations and returns by fiscal officers.

(3) Appropriations for The Panama Canal are made under the heads of "Maintenance and operation," "Sanitation," and "Civil government."

(4) Includes revenues shown in (9).

(5) Accounts of fiscal officers.

(6) Amortization on canal fixed property, the usable life of which is considered as 100 years, was written into canal expenses for the fiscal year in a lump sum based on a figure of annual amortization which at compound interest at 3 per cent will amortize the investment in 100 years. Items which have an estimated life of less than 100 years are depreciated in a lump sum at a figure which will provide funds for maintaining similar property in a usable condition during the entire life of the canal.

(7) Equipment depreciation is charged into operations at rates that represent amortization on the basis of the usable life of each unit, with proper allowance for salvage.

(8) Each of the units in this account derives some revenues from its operation, and these are used to help pay the expenses. The balance of the expenses is paid from appropriations made by Congress.

(9) Revenues from sources shown are covered direct into the Treasury of the United States without use of any part of them in defraying expenses of the operations from which they come.

(10) Fixed business property is amortized at rates that will provide for replacement.

(11) Equipment depreciated as in (7).

(12) Each separate business unit charges rates that will insure a 3 per cent return on the investment. The only exception is public works in Panama and Colon, which are limited to a 2 per cent return in accordance with a contract made with the Government of Panama.

(13) The telephone system is owned by the Panama Railroad, but operated by The Panama Canal. The account, therefore, is carried for both organizations.

(14) The railroad proper sells only services, and its accounts may, therefore, be shown as "Expenses" and "Revenues." The business is conducted on the basis of amortizing the property and paying interest on the investment.

(15) In these business operations the railroad sells both services and commodities and each unit has, therefore, its own revenue, expense, and profit-and-loss account. The system is self-sustaining and also pays amortization charges and a small profit. Separate units return a profit according as business fluctuates.

SECTION V.

FINANCIAL AND STATISTICAL STATEMENTS.

This section contains financial statements of The Panama Canal (Tables 1 to 53) and statistical statements of canal operations and traffic (Tables 54 to 58). For convenience of cross reference the original numbering of the financial statements quoted from the annual report of the auditor of The Panama Canal has been preserved, although a few of those statements have not been printed and others have been summarized. A complete list of those statements, including those omitted, follows:

- Table No. 1. Trial and general balance sheets, June 30, 1922.
- Table No. 2. Balance in appropriation and fund accounting ledger, June 30, 1922.
- Table No. 3. Statement of appropriations by Congress.
- Table No. 4. Status of authorized bond issue.
- Table No. 5. Statement of appropriation receipts and disbursements for fiscal year ended June 30, 1922.
- Table No. 6. Payments by paymaster, fiscal year ending June 30, 1922.
- Table No. 7. Detail of collections and disbursements for fiscal year ended June 30, 1922.
- Table No. 8. Statement of collections repaid to appropriations and to individuals and companies, and collections deposited to miscellaneous receipts during the fiscal year ended June 30, 1922.
- Table No. 9. Statement of transactions in the collector's special deposit account during the fiscal year ended June 30, 1922.
- Table No. 10. Balance of miscellaneous trust funds on deposit with collector, June 30, 1922.
- Table No. 11. Statement of audited pay rolls on Isthmus during fiscal year 1922.
- Table No. 12. Statement of accounts receivable registered during fiscal year ended June 30, 1922.
- Table No. 13. Comparative statement of accounts payable.
- Table No. 14. Statement showing expenditures for canal construction (including capital additions) to December 31, 1921; the value of property set up in new accounts "Canal transit property" and "Canal business property"; and amount charged to "Defense capital expenditures."
- Table No. 15. Defense capital expenditures to June 30, 1922.
- Table No. 16. Detail of canal fixed property to June 30, 1922.
- Table No. 17. Fixed business property, fiscal year ended June 30, 1922.
- Table No. 18. Detail of canal transit equipment to June 30, 1922.
- Table No. 19. Business property by divisions.
- Table No. 20. Property and equipment exchanged between The Panama Canal and Panama Railroad Co.
- Table No. 21. Status of public works in Cities of Panama and Colon, June 30, 1922.
- Table No. 22. Detail of canal transit material and supplies.
- Table No. 23. Receipts, issues, and transfers of stores and purchases charged to divisions during fiscal year 1922.
- Table No. 24. Comparative statement of store balance, July 1, 1921, and July 1, 1922. This statement has not been printed. It will be found in the auditor's report.

It shows stores valued at \$8,515,384.99 on July 1, 1921; and stores valued at \$5,510,-333.21 on July 1, 1922.

Table No. 25. Statement of canal expenses, earnings, and net expenses.

Table No. 26. Detail of canal transit revenues.

Table No. 27. Statement of business expenses, revenues, and profit and loss, fiscal year 1922.

Table No. 28. Comparison of expenses, revenues, and surplus to June 30, 1922.

Table No. 29. Pay-roll deductions from employees for rent, etc.

Table No. 30. Detail of reserves for depreciation.

Table No. 31. Detail of reserve for repairs.

Table No. 32. Reserve for gratuity due employees.

Table No. 33. Detail of cost of production and distribution of electrical current.

Table No. 34. Detailed cost of production of water per 1,000 gallons.

Table No. 35. Dredging operations.

Table No. 36. Statement of money orders issued and paid by the Canal Zone and Canal Zone orders paid by other administrations, fiscal years 1907 to 1922, inclusive.

Table No. 37. Postal service. Statement showing the money order business of the Canal Zone postal service during the fiscal year ended June 30, 1922.

Table No. 38. Postal service. Statement of audited revenues, fiscal years 1907 to 1922, inclusive.

Table No. 39. Postal service. Statement of postal revenues, fiscal year ended June 30, 1922.

Table No. 40. Postal service. Statement of postal savings and deposit money order transactions, fiscal year ended June 30, 1922.

Table No. 41. Statement of income, bureau of clubs and playgrounds, fiscal year ended June 30, 1922. This table has not been printed. It will be found in the auditor's report. The total income of the bureau was \$483,848.71.

Table No. 42. Statement of expenses, bureau of clubs and playgrounds, fiscal year ended June 30, 1922. This table has not been printed. It will be found in the auditor's report. The total expenses of the bureau were \$442,205.99.

Table No. 43. Summary of income and expenses, bureau of clubs and playgrounds, fiscal year ended June 30, 1922.

Table No. 44. Bureau of clubs and playgrounds, balance sheet, June 30, 1922.

Table No. 45. Commissary coupons issued, sold, and honored during the fiscal year, 1922.

Table No. 46. Statement of amounts paid on account of employees' death and injury claims. This table has not been printed. It will be found in the auditor's report. Payments to June 30, 1922, aggregate \$1,746,717.03.

Table No. 47. Statement of payments on account of employees' death and injury claims during the fiscal year 1922. This table has not been printed. It will be found in the auditor's report. Payments totaled \$64,563.23.

Table No. 48. Number of injuries, by extent of disability, for each division or department. This table has not been printed. It will be found in the auditor's report. Total number of injuries was 1,740.

Table No. 49. Nature of nonfatal cases by department or division. This table has not been printed. It will be found in the auditor's report. The number of nonfatal cases was 1,736.

Table No. 50. Number of cases and compensation paid, classed by injuries, for the fiscal year, and number of cases and amount of compensation paid during the fiscal year on account of injuries occurring during the period September 7, 1916, to June 30, 1921. This table has not been printed. It will be found in the auditor's report. Payments in 1922 on account of 1,740 cases aggregated \$16,525.37. Payments from September 7, 1916, to June 30, 1921, on account of 81 cases aggregated \$46,413.44.

Table No. 51. Causes of injuries by departments and divisions. This table has not been printed. It will be found in the auditor's report.

Table No. 52. Class of work being performed by employees at the time of injury, by departments and divisions. This table has not been printed. It will be found in the auditor's report.

Table No. 53. Supply department, commissary branch, statement of cost of material and supplies purchased and sold during the fiscal year ended June 30, 1922. This table has not been printed. It will be found in the auditor's report.

Table No. 54. Summary of commercial traffic through The Panama Canal during the fiscal year 1922 and since its opening to commercial traffic.

Table No. 55. Number of commercial vessels of various nationalities passing through The Panama Canal 1915-1922.

Table No. 56-A. Origin and destination of all commercial cargo passing through The Panama Canal from the Atlantic to the Pacific during the fiscal year 1922.

Table No. 56-B. Origin and destination of all commercial cargo passing through The Panama Canal from Pacific to the Atlantic during the fiscal year 1922.

Table No. 57-A. Number of commercial vessels by nationality passing through The Panama Canal from its opening to June 30, 1922, by fiscal years.

Table No. 57-B. Tons of cargo carried by commercial vessels passing through The Panama Canal from its opening to June 30, 1922, by fiscal years.

Table No. 57-C. The Panama Canal net tonnage of vessels by nationalities passing through The Panama Canal from its opening to June 30, 1922, by fiscal years.

Table No. 58. Statement showing the number of vessels, The Panama Canal net tonnage, tolls assessed, and tons of cargo carried by vessels of the principal nations passing through The Panama Canal during the first eight years of its operation.

TABLE NO. 1.—*Trial balance sheet June 30, 1922.*

DEBITS.		CREDITS.	
Canal fixed property.....	\$235,381,918.30	Canal capital.....	\$246,418,989.81
Canal equipment.....	4,483,672.27	Business capital.....	28,760,308.44
Cash due Treasury.....	125,268.96	Accounts payable.....	1,277,813.68
Cash working.....	2,108,825.12	Unclassified canal credits.....	2,214.37
Accounts receivable.....	1,266,323.28	Amortization.....	350,000.00
Business property.....	28,700,129.24	Depreciation.....	3,146,192.96
Stores.....	4,607,167.54	Repair reserves.....	940,929.13
United States Treasury.....	9,529,137.57	Gratuity reserves.....	431,806.90
Unclassified canal expenditures.....	17,956.40	Canal reserves.....	11,845,592.32
Canal expenses.....	10,407,784.23	Business revenues.....	7,688,770.25
Business expenses.....	7,423,968.41	Business surplus.....	1,153,766.86
Canal earnings (credit account).....	12,488,766.60		
Total.....	301,561,384.72	Total.....	301,561,384.72

General balance sheet June 30, 1922.

ASSETS.		LIABILITIES.	
Canal fixed property.....	\$235,381,918.30	Canal capital.....	\$246,418,989.81
Canal equipment.....	4,483,672.27	Business capital.....	28,760,308.44
Cash due Treasury.....	125,268.96	Accounts payable.....	1,277,813.68
Cash working.....	2,108,825.12	Unclassified canal credits.....	2,214.37
Accounts receivable.....	1,266,323.28	Amortization.....	350,000.00
Business property.....	28,700,129.24	Depreciation.....	3,146,192.96
Stores.....	4,607,167.54	Repair reserves.....	940,929.13
United States Treasury.....	9,529,137.57	Gratuity reserves.....	431,806.90
Unclassified canal expenditures.....	17,956.40	Canal surplus.....	3,466,574.69
Total.....	286,218,398.68	Business surplus.....	1,423,568.70
		Total.....	286,218,398.68

¹ Credit.

The balance sheet, Table No. 1, is entirely different from the one in the last annual report. The items which were charged off as national defense expenditures and which appear in the balance sheet last year, are omitted this year. In the new balance sheet the canal capital account and the business capital account have taken the place of the old account "Appropriations by Congress." The appropriation funds which have not yet been requisitioned by fiscal officers, but which are subject to requisition, are no longer carried in the general balance sheet but now appear in the table for appropriations and funds accounting. The canal capital account was used as the balancing account when the books were opened after setting up the account with the United States Treasury, representing the excess deposits over withdrawals as of April 1, 1922.

TABLE No. 2.—Balance in appropriation and fund accounting ledger, June 30, 1922.

Assets.		Treasury balance subject to requisition for cash.	Cash.	Accounts receivable.	Transfers available.	Storehouse stock.	Total.
1. Maintenance and operation.....		\$7,905,822.08	\$1,959,284.15	\$1,086,509.32	\$152,820.58	\$5,141,165.34	\$16,227,602.57
2. Sanitation.....		370,338.31	201,213.66	93,227.38	.....	101,959.86	766,769.21
3. Civil government.....		88,917.22	54,679.54	4,972.56	.....	.....	148,569.32
4. Miscellaneous receipts.....		.....	125,298.96	99,613.52	264,801.84	.....	489,684.32
5. Trust funds.....		.....	480,872.02	.....	.....	.....	480,872.02
6. Increase of compensation, 1921.....		3,208.81	.....	.....	.....	.....	3,208.81
7. Increase of compensation, 1922.....		.....	615.65	.....	.....	.....	615.65
8. Construction and equipment.....		303,257.21	21,219.86	.....	.....	.....	324,507.07
9. Panama Canal fund.....		128,992.08	2,911.66	.....	.....	.....	131,903.74
10. Canal connecting Atlantic and Pacific Oceans.....		27,989.66	.....	.....	.....	.....	27,989.66
14. Engineering—Bureau of Engineering.....		14,000.00	.....	.....	.....	.....	14,000.00
15. Aviation—Navy, 1922.....		80,000.00	.....	.....	.....	.....	80,000.00
Total.....		8,922,525.97	2,846,125.50	1,266,223.28	417,622.42	6,243,125.20	18,665,722.37

Liabilities.		Unencumbered and unallotted appropriations.	Unliquidated encumbrances.	Undistributed encumbrances.	Outstanding liabilities on encumbrances.	Liabilities.	Transfers payable.	Total.
1. Maintenance and operation.....		\$4,882,624.88	\$4,582,794.52	\$5,277,250.64	\$295,028.13	\$925,094.58	\$264,801.84	\$16,227,602.57
2. Sanitation.....		465,046.84	374.41	106,008.47	5,778.27	103,626.46	79,934.76	766,769.21
3. Civil government.....		22,371.77	111.80	.....	250.86	78,841.22	47,013.58	148,569.32
4. Miscellaneous receipts.....		.....	.....	.....	.....	489,684.32	.....	489,684.32
5. Trust funds.....		.....	.....	.....	.....	480,872.02	.....	480,872.02
6. Increase of compensation, 1921.....		3,208.81	.....	.....	.....	.....	.....	3,208.81
7. Increase of compensation, 1922.....		.....	.....	.....	.....	.....	.....	615.65
8. Construction and equipment.....		242,010.84	.....	.....	.....	56,624.49	25,872.24	324,507.07
9. Panama Canal fund.....		.....	7,151.35	.....	.....	124,752.39	.....	131,903.74
10. Canal connecting Atlantic and Pacific Oceans.....		7,989.66	.....	.....	.....	20,000.00	.....	27,989.66
14. Engineering—Bureau of Engineering.....		14,000.00	.....	.....	.....	.....	.....	14,000.00
15. Aviation—Navy, 1922.....		80,000.00	.....	.....	.....	.....	.....	80,000.00
Total.....		5,717,877.95	4,594,432.08	5,385,269.11	301,035.95	2,279,485.46	417,622.42	18,665,722.37

Detail of cash by fiscal officers.		Disbursing clerk.	Paymaster.	Collector.	Total.
1. Maintenance and operation.....		\$277,121.01	\$1,077,410.94	\$4,746.20	\$1,859,284.15
2. Sanitation.....		3,249.53	183,431.38	9,502.75	201,243.66
3. Civil government.....		3,127.09	46,794.23	4,738.17	54,659.54
4. Miscellaneous receipts.....		.....	.....	123,208.96	123,208.96
5. Trust funds.....		45,210.05	2,634.11	433,027.86	480,872.02
6. Increase of compensation, 1922.....		.....	.....	.....	.....
7. Construction and equipment.....		21,244.88	.....	.....	21,244.88
8. Panama Canal fund.....		2,911.66	.....	.....	2,911.66
Total.....		363,494.85	1,915,336.71	577,303.94	2,846,125.50

TABLE NO. 3.—*Statement of appropriations by Congress.*

Canal construction appropriations.....					\$387,069,108.31
(For detail see annual report for 1920 and prior.)					
Annual payments to Republic of Panama.....					2,750,000.00
Act of—					
Mar. 4, 1913.....				\$250,000.00	
Apr. 6, 1914.....				250,000.00	
Jan. 25, 1915.....				250,000.00	
Feb. 28, 1916.....				250,000.00	
July 1, 1916.....				250,000.00	
Mar. 3, 1917.....				250,000.00	
Apr. 15, 1918.....				250,000.00	
Apr. 15, 1919.....				250,000.00	
June 4, 1920.....				250,000.00	
Mar. 2, 1921.....				250,000.00	
June 1, 1922.....				250,000.00	
Operation and maintenance.....					62,338,305.94
	Maintenance and operation.	Sanitation, Canal Zone.	Civil gov- ernment, Panama Canal, Canal Zone.	Increase of compensa- tion, Panama Canal.	Total.
Act of—					
Mar. 3, 1915.....	\$5,200,000.00	\$700,000.00	\$540,000.00		\$6,440,000.00
July 1, 1916.....	5,750,000.00	700,000.00	600,000.00		7,050,000.00
June 12, 1917.....	9,000,000.00	700,000.00	700,000.00		10,400,000.00
July 12, 1917.....				\$10,000.22	10,006.22
June 4, 1918.....		150,000.00			150,000.00
July 1, 1918.....	9,000,000.00	900,000.00	750,000.00		10,650,000.00
July 3, 1918.....				16,000.00	16,000.00
Mar. 1, 1919.....				35,018.33	35,018.33
July 19, 1919.....	7,547,939.00	850,000.00	702,000.00		9,099,939.00
Nov. 4, 1919.....			150,000.00		150,000.00
May 29, 1920.....				34,500.00	34,500.00
June 5, 1920.....	7,531,851.00	850,000.00	900,000.00		9,281,851.00
Mar. 1, 1921.....			24,670.00		24,670.00
Mar. 4, 1921.....	7,250,000.00	850,000.00	900,000.00		9,000,000.00
	51,269,790.00	5,700,000.00	5,266,670.00	95,524.55	62,341,984.55
Less amount transferred to surplus fund.....				3,678.61	3,678.61
Total.....	51,269,790.00	5,700,000.00	5,266,670.00	91,845.94	62,338,305.94
Appropriation for fiscal year 1923: Act of June 30, 1922.....	2,659,434.00	525,000.00	930,000.00		4,114,434.00

TABLE NO. 4.—*Status of authorized bond issue.*

Authorized bond issue.....		\$375,200,900.00
Appropriated for canal construction.....	\$387,069,108.31	
Less amount exempted by law:		
Colliers <i>Ulysses</i> and <i>Achilles</i>	\$1,985,552.29	
Coal barges <i>Mamei</i> and <i>Darien</i>	2,295,746.57	
Dock No. 6, Cristobal.....	2,093,190.00	
Equipping colliers <i>Ulysses</i> and <i>Achilles</i>	250,000.00	
Painting tanks, colliers <i>Ulysses</i> and <i>Achilles</i>	44,279.76	
Repairs to steamships <i>Ancon</i> and <i>Cristobal</i>	720,000.00	
Expended for operation and maintenance of canal.....	4,289,159.00	
Stock of material and supplies for operation and main- tenance of canal.....	2,225,000.00	
	13,902,927.62	373,166,180.69
Balance.....		2,034,719.31
Appraised value American legation building in the city of Panama, exempt from charge to bond issue, act July 1, 1916.....		22,256.00
Balance available for appropriation within limit of cost of canal and authorized bond issue.....		2,056,975.31

NOTE.—No statement has been prepared showing the expenditures of these funds, as the table in last year's annual report is complete with the exception of a small amount of construction dredging, which was performed during the fiscal year 1922.

TABLE NO. 5.—Statement of appropriation receipts and disbursements for fiscal year ended June 30, 1922.

	Cash balance, July 1, 1921.	Appropriations.	Repayments.		Total.
			By collections.	By transfers.	
Construction appropriations:					
Canal connecting Atlantic and Pacific Oceans.....	\$29,102.76				\$29,102.76
Panama Canal fund.....	131,992.08				131,992.08
Construction and equipment, Panama Canal.....	692,047.23				692,047.23
Private act, Feb. 18, 1913, Oscar F. Lackey.....	1,500.00				1,500.00
Total construction.....	854,642.07				854,642.07
Operation and maintenance appropriations:					
Maintenance and operation, Panama Canal.....	5,007,888.68	\$7,250,000.00	\$9,952,588.50	\$748,467.95	22,958,945.13
Sanitation, Canal Zone, Panama Canal.....	270,625.57	850,000.00	835,490.49		1,956,116.06
Civil government, Panama Canal and Canal Zone.....	147,122.11	900,000.00	74,477.95		1,121,600.06
Increase of compensation.....	5,725.71	21,500.00			27,225.71
Total operation and maintenance.....	5,431,362.07	9,021,500.00	10,862,556.94	748,467.95	26,063,886.96

	Expenditures.			Cash balance, June 30, 1922.
	By cash disbursements.	By transfers.	Total.	
Construction appropriations:				
Canal connecting Atlantic and Pacific Oceans.....		\$1,113.10	\$1,113.10	\$27,989.66
Panama Canal fund.....	\$88.34		88.34	131,908.74
Construction and equipment, Panama Canal.....	9,214.24	358,325.92	367,540.16	324,507.07
Private act, Feb. 18, 1913, Oscar F. Lackey.....				1,500.00
Total construction.....	9,302.58	359,439.02	368,741.60	485,900.47
Operation and maintenance appropriations:				
Maintenance and operation, Panama Canal.....	13,093,840.40		13,093,840.40	9,865,104.73
Sanitation, Canal Zone, Panama Canal.....	1,171,740.42	212,791.57	1,384,531.99	571,584.07
Civil government, Panama Canal and Canal Zone.....	876,213.95	101,789.35	978,003.30	143,596.76
Increase of compensation.....	23,401.25		23,401.25	3,824.46
Total operation and maintenance.....	15,165,196.02	314,580.92	15,479,776.94	10,584,110.02

TABLE NO. 6.—*Payments made by fiscal officers, fiscal year ended June 30, 1922.*¹

Payments by paymaster:		
Panama Canal—		
Gold rolls.....		\$6,247,008.78
Silver rolls.....		3,770,800.65
Vouchers.....		4,283,649.69
Total.....		14,301,459.12
Panama Railroad—		
Pay rolls.....		3,094,408.63
Vouchers.....		4,981,153.65
Total.....		8,075,562.28
Grand total.....		22,377,020.40
Payments by disbursing clerk.....		2,092,806.57
Payments by collector:		
Clubhouse funds.....		332,558.15
Trust funds.....		9,678.50
Postal savings funds.....		250.00
Money-order funds.....		1,679,061.09
Interest.....		34,142.23
Total.....		2,055,690.97

¹ This table is summarized. Figures are given in greater detail in table of same number in annual report of accounting department.

TABLE NO. 7.—*Detail of collections and disbursements for fiscal year ended June 30, 1922.*

	Treasurer.	Disbursing clerk.	Paymaster.	Collector.	Total.
Cash disbursements:					
Panama Canal fund.....		\$88.43			\$88.48
Construction and equipment, Panama Canal.....	\$9,214.24				9,214.24
Maintenance and operation..	562,087.74	1,980,374.58	\$9,987,166.88	\$564,211.20	13,063,840.40
Sanitation, Canal Zone, Panama Canal.....	12,887.46	73,914.38	1,084,938.58		1,171,740.42
Civil government.....	3,949.21	17,544.92	854,719.82		876,213.95
Increase of compensation.....	2,516.90	20,884.35			23,401.25
Panama fortifications.....	1,262.52				1,262.52
	591,918.07	2,092,806.66	11,926,825.28	564,211.20	15,175,761.21
Disbursements account individuals and companies and other than from appropriations.....					
			2,374,634.59	4,148,503.54	6,523,138.13
	591,918.07	2,092,806.66	14,301,459.87	4,712,714.74	21,608,899.34
Collections:					
Maintenance and operation..	2,331,258.44	681,306.78	912.06	6,939,111.22	9,952,588.50
Sanitation, Canal Zone, Panama Canal.....	108,706.84	2,928.76	14.50	723,840.39	835,490.49
Civil government, Panama Canal and Canal Zone.....	1,852.40	5,388.24	1.00	67,286.31	74,477.95
	2,441,817.68	689,623.78	927.56	7,730,187.92	10,862,556.94
Miscellaneous receipts and individuals and companies.....					
		15,975.00		11,477,944.48	11,493,919.48
	2,441,817.68	705,593.78	927.56	19,208,132.40	22,356,476.42

TABLE NO. 8.—*Statement of collections repaid to appropriations and to individuals and companies, and collections deposited to miscellaneous receipts during the fiscal year 1922.*¹

To maintenance and operation.....	\$6,939,111.22	
By electrical division.....		\$558,907.20
By municipal engineering division.....		408,586.06
By dredging division.....		17,573.88
By mechanical division.....		1,841,059.58
By marine division.....		636,691.13
By quartermaster.....		2,226,211.48
By subsistence division.....		264,164.68
By fortifications division.....		118,933.23
By other divisions.....		2,965.14
By executive department.....		136,844.05
By accounting department.....		250,670.05
By rentals credited to maintenance and operation.....		49,986.41
By various collections credited to maintenance and operation.....		426,518.33
To health department (sanitation).....	\$723,840.39	
By miscellaneous collections.....		723,840.39
To civil government.....	\$67,236.31	
By miscellaneous collections.....		67,236.31
To miscellaneous receipts.....	\$11,477,312.91	
By tolls.....		11,198,008.51
By licenses and taxes.....		20,176.02
By court fees and fines.....		24,732.10
By postal receipts.....		117,047.24
By water rentals, Panama.....		38,188.30
By water rentals, Colon.....		49,412.70
By interest on bank balances.....		25,000.00
By credit due canal construction accounts.....		3,716.00
By miscellaneous (customs, pound fees, etc.).....		1,032.04
To individuals and companies.....	\$631.57	
By paymaster, various individuals and companies.....		604.22
By paymaster, Panama R. R. commissary books.....		17.35
By Canal Zone trust funds.....		10.00

RECAPITULATION.

Maintenance and operation, Panama Canal.....	6,939,111.22
Sanitation, Panama Canal and Canal Zone.....	723,840.39
Civil government, Panama Canal and Canal Zone.....	67,236.31
Total repayment to appropriations.....	7,730,187.92
Miscellaneous receipts.....	11,477,312.91
Individuals and companies.....	631.57
Total collections.....	19,208,132.40

¹This table is summarized. Figures are given in greater detail in table of same number, annual report of accounting department.

TABLE NO. 9.—*Statement of transactions in the collector's special deposit account during the fiscal year ended June 30, 1922.*¹

	In the United States.		On the Isthmus.	
On hand July 1, 1921.....	\$14,538.00		\$395,683.44	
Deposits during the year.....	692,986.25		15,790,624.57	
Panama Canal bills applied.....		\$475,014.00		\$12,289,563.45
Payments to individuals and companies ²		149,846.79		3,401,428.75
Refunds.....		48,705.78		99,247.63
On hand June 30, 1922.....		33,957.68		399,070.18
Total.....	707,524.25	707,524.25	16,186,308.01	16,186,308.01

¹ This table is summarized. Figures are given in greater detail in table of same number in annual report of accounting department.

² Includes the Panama R. R. Co., All America Cables (Inc.), and other individuals and companies.

TABLE NO. 10.—*Balances of miscellaneous trust funds on deposit with collector June 30, 1922.*

Postal savings funds.....	\$208.00
Money-order funds.....	878,098.52
Trust funds.....	6,396.76
Clubhouse funds.....	100,355.21
Interest.....	7,669.02
Treasury savings certificates funds.....	40,500.00
Total.....	1,033,197.51

TABLE NO. 11.—Statement of audited pay rolls on Isthmus during fiscal year 1922.

	Total.	Salaries.	Wages.
Operation and maintenance:			
Executive office—			
Executive.....	\$23,257.67	\$23,257.67	.....
Record.....	75,560.68	75,324.62	\$236.06
Personnel.....	33,398.97	33,398.97	.....
Correspondence.....	39,125.23	39,092.73	32.50
Property.....	31,202.36	31,202.36	.....
Statistics.....	20,812.73	20,812.73	.....
General.....	22,893.75	22,893.75	.....
Pay rolls.....	79,465.47	79,465.47	.....
Shipping commissioner.....	33,300.34	33,300.34	.....
Motor cars.....	5,960.99	1,892.95	3,968.04
Clubs and playgrounds.....	165,815.40	146,498.09	19,317.31
Total, executive office.....	530,693.59	507,139.68	23,553.91
Engineer of maintenance:			
Lock operation—			
Atlantic.....	290,627.25	86,441.96	204,185.39
Pacific.....	558,607.84	150,904.39	407,713.45
Electrical.....	490,750.62	200,687.07	290,063.55
Dredging.....	895,687.06	235,085.35	660,601.71
Municipal engineering.....	599,657.56	224,725.35	374,932.21
Office engineer.....	32,452.91	31,684.28	768.63
Meteorology and hydrography.....	30,539.65	28,186.71	2,352.94
Surveys.....	38,376.80	24,797.30	13,579.50
Gatun Dam and back fill.....	40,280.69	9,558.49	30,722.20
Total, engineer of maintenance.....	2,976,980.38	992,060.80	1,984,919.58
Marine division:			
Office.....	10,258.01	10,258.01	.....
Port captain—			
Balboa.....	388,958.96	198,897.48	198,061.48
Cristobal.....	341,722.77	193,319.02	148,403.75
Lighthouse division.....	137,857.86	42,145.25	95,712.60
Total, marine division.....	878,797.59	436,619.76	442,177.83
Mechanical division:			
Balboa.....	1,238,112.08	244,072.43	994,039.65
Cristobal.....	373,992.95	48,497.66	325,495.39
Total, mechanical division.....	1,612,105.03	292,569.99	1,319,535.04
Supply department:			
Quartermaster—			
Office.....	37,643.09	37,643.09	.....
Storehouses.....	246,881.27	173,996.25	72,885.02
District quartermaster.....	354,867.88	165,589.78	189,278.20
Printing plant.....	68,237.50	22,390.30	45,847.30
Fuel-oil plants.....	72,473.43	15,440.75	57,032.68
Constructing quartermaster.....	292,919.16	64,856.05	228,063.11
Motor-car repair shop.....	20,907.25	7,018.42	13,888.83
Motor transportation.....	83,978.40	7,068.82	76,909.58
Total, quartermaster.....	1,178,008.08	494,003.36	684,004.72
Subsistence.....	144,056.78	73,216.25	70,840.53
Total, quartermaster and subsistence.....	1,322,064.86	567,219.61	754,845.25
Accounting—			
Auditor.....	355,372.59	355,362.92	9.67
Paymaster.....	38,522.31	38,522.31	.....
Collector.....	41,701.34	41,701.34	.....
Total accounting.....	435,596.24	435,586.57	9.67
Fortifications.....	268,046.25	77,017.14	191,029.11
Injury and death—			
Old act.....	631.21	.....	631.21
New act.....	63,932.02	1,534.99	62,397.03
Total, operation and maintenance.....	8,088,847.17	3,309,748.54	4,779,098.63
Civil government:			
Civil affairs.....	37,589.02	37,589.02	.....
Posts.....	101,910.20	101,910.20	.....
Police and prisons.....	310,657.68	310,657.68	.....
Fire protection.....	92,760.12	92,760.12	.....
Schools.....	165,200.82	165,200.82	.....
District court.....	20,149.64	20,149.64	.....

TABLE NO. 11.—*Statement of audited pay rolls on Isthmus during fiscal year 1922—Continued.*

	Total.	Salaries.	Wages.
Civil government—Continued.			
District attorney.....	\$10,414.85	\$10,414.85	
Marshal.....	7,400.00	7,400.00	
Magistrate court.....	14,063.78	14,063.78	
Total, civil government.....	760,176.11	760,176.11	
Sanitation:			
Office.....	11,425.57	11,425.57	
Medical store.....	5,969.77	5,690.47	\$279.30
Ancon Hospital.....	357,011.81	298,729.09	58,282.72
Colon Hospital.....	56,017.08	49,128.07	6,891.01
Santo Tomas Hospital.....	13,474.34	13,474.34	
Palo Seco Leper Asylum.....	17,062.51	7,839.36	9,223.15
Dispensaries.....	40,158.79	39,356.54	802.25
Quarantine—			
Office.....	739.17	739.17	
Balboa.....	19,819.34	16,605.69	3,213.65
Cristobal.....	26,166.39	22,692.39	3,474.00
Bocas del Toro.....	1,577.07	1,577.07	
Total, quarantine.....	48,301.97	41,614.32	6,687.65
Corozal Farm.....	13,927.81	3,834.63	10,093.18
Corozal Asylum.....	54,113.38	44,631.08	9,482.35
Health office—			
Panama.....	115,641.26	35,514.17	80,127.09
Colon.....	67,289.72	27,454.50	39,835.22
Zone sanitation.....	81,921.53	21,919.20	60,002.33
Total, sanitation.....	882,315.54	600,609.29	281,706.25
Grand total.....	9,731,338.82	4,670,533.94	5,060,804.88

TABLE NO. 12.—*Statement of accounts receivable registered during the fiscal year ended June 30, 1922.*¹

Number of bills registered.....	26,425
Total.....	\$20,631,132.11
Against the Panama Railroad.....	2,144,015.6
Against the Republic of Panama.....	308,055.06
Against other departments of the United States.....	1,812,372.71
Against steamship companies.....	1,688,195.19
Against other individuals and companies.....	1,516,057.01
Trust funds.....	1,864,427.99
Tolls.....	11,198,008.51
Repay to appropriations.....	7,445,201.18

¹ This table is summarized. Figures are given in greater detail in table of same number in annual report of accounting department.

TABLE NO. 13.—*Comparative statement of accounts payable.*

	Fiscal year 1921.	Fiscal year 1922.
United States invoices and ocean freight.....	\$839,609.59	\$185,164.10
Isthmus vouchers.....	547,407.84	100,015.06
Current pay rolls.....	1,049,513.33	739,335.77
Unpaid salaries and wages.....	262,451.76	252,830.16
Drums, carboys, and reels.....		1,510.53
Treasury settlements in suspense.....		2,177.12
Total.....	2,697,882.51	1,277,813.68

¹ Credit.

TABLE NO. 14.—Statement showing expenditures for canal construction (including capital additions) to December 31, 1921; the value of property set up in new accounts "Canal transit property" and "Canal business property" in December, 1921, accounts, and amount charged to "Defense capital expenditures."

	Ledger balances Dec. 31, 1921.	Canal transit property.	Canal business property.	Defense capital expenditure.
Canal construction:				
Prism excavation—				
Gatun to sea.....	\$11,874,182.88	\$11,636,700.00		\$237,482.88
Gatun to Pedro Miguel.....	107,067,900.67	104,926,342.00		2,141,558.67
Pedro Miguel to sea.....	18,400,625.05	18,032,612.00		368,013.05
Gatun Locks.....	35,965,982.05	34,762,029.00		1,203,953.05
Pedro Miguel Locks.....	15,988,049.30	15,349,450.00		638,599.30
Miraflores Locks.....	23,285,399.23	22,418,744.00		867,655.23
Gatun Spillway.....	4,081,516.86	3,982,199.00		99,317.86
Miraflores Spillway and East Dam.....	1,320,389.95	1,231,256.00		89,133.95
Gatun-Mindi Levee.....	140,635.01	137,822.00		2,813.01
Gatun Dam.....	9,823,140.60	9,626,678.00		196,462.60
Trinidad River Dam.....	66,385.47	65,057.00		1,328.47
Pedro Miguel Dams.....	431,703.66	423,070.00		8,633.66
Miraflores West Dam.....	1,159,789.78	1,136,594.00		23,195.78
La Boca Locks and Dams (abandoned).....	748,054.48			748,054.48
Colon East Breakwater.....	3,771,111.74			3,771,111.74
Colon West Breakwater.....	4,275,316.42	4,189,810.00		85,506.42
Naos Island Breakwater.....	1,015,649.78	995,337.00		20,312.78
Aids to navigation.....	920,747.54	827,359.00		93,388.54
Floating caisson.....	347,868.15	326,996.00		20,872.15
Auxiliary works:				
Hydroelectric power plant, Gatun.....	1,667,093.96		\$1,667,093.96	
Steam electric power plant, Miraflores.....	307,862.44		307,862.44	
Power transmission system.....	4,394,051.62	90,490.00	4,293,506.16	10,055.46
Coaling station—				
Balboa.....	2,284,568.35			2,284,568.35
Cristobal.....	3,679,797.59		500,000.00	3,179,797.59
Fuel-oil plant—				
Balboa.....	458,860.58		458,860.58	
Cristobal.....	560,457.59		560,457.59	
Dry dock—				
Balboa.....	3,376,647.49			3,376,647.49
Cristobal.....	73,475.51		50,000.00	23,475.51
Docks, piers, and wharves—				
Balboa.....	3,132,102.71		1,168,200.26	1,963,902.45
Cristobal.....	2,201,979.74		2,201,979.74	
Entrance basin, Balboa.....	489,480.39			489,480.39
Inner harbor—				
Balboa.....	3,265,207.04			3,265,207.04
Cristobal.....	237,101.43			237,101.43
Preparatory work, Balboa terminals.....	1,808,921.65			1,808,921.65
Panama water-supply system.....	1,765,222.58		1,724,525.00	40,697.58
Colon water-supply system.....	585,642.89		585,642.89	
Other zone water-supply systems.....	723,428.14		564,238.11	159,190.03
Zone sewage systems.....	498,284.69	200,000.00		298,284.69
Zone roadways.....	1,586,622.89	978,070.00		608,552.89
Fluviographs.....	13,709.02	10,282.00		3,427.02
Permanent town site—				
Ancon-Balboa.....	596,596.73			596,596.73
La Boca.....	123,206.13			123,206.13
Red Tank.....	2,614.43			2,614.43
Pedro Miguel.....	96,797.08			96,797.08
Gatun.....	1,776.56			1,776.56
Cristobal.....	354,827.53			354,827.53
Sanitary fills.....	636,732.11			636,732.11
Sanitary ditches.....	199,706.53			199,706.53
Playgrounds.....	54,474.41	40,572.00		13,902.41
Buildings:				
Administration, Balboa Heights.....	1,224,847.51	918,636.00		306,211.51
District court and law department office, Ancon.....	130,892.39	65,446.00		65,446.39
Shop and store office, Balboa.....	238,553.94			238,553.94
Terminal office building, Balboa.....	80,634.42	77,409.00		3,225.42
Shops—				
Balboa.....	3,997,760.32		202,500.00	3,795,260.32
Cristobal.....	206,647.93			206,647.93
Storehouses.....	1,075,934.74	300,000.00	300,000.00	476,934.74
Hotels and mess halls.....	574,731.87		335,322.00	239,409.87
Quarters—				
Gold.....	4,803,110.96		3,435,076.00	1,368,034.96
Silver.....	890,266.74		619,231.00	271,035.74
Miscellaneous buildings.....	815,233.48	76,416.00	219,746.00	520,071.48
Ancon Hospital.....	1,741,300.80	1,305,975.00		435,325.80
Colon Hospital.....	255,506.90	191,630.00		63,876.90
Dispensaries.....	161,213.97	120,910.00		40,303.97
Asylums.....	252,786.54	126,393.00		126,393.54

TABLE NO. 14.—*Statement showing expenditures for canal construction (including capital additions) to December 31, 1921; the value of property set up in new accounts "Canal transit property" and "Canal business property" in December, 1921, accounts, and amount charged to "Defense capital expenditures"—Continued.*

	Ledger balances Dec. 31, 1921.	Canal transit property.	Canal business property.	Defense capital expenditure.
Buildings—Continued.				
Quarantine stations.....	\$80,258.48	\$40,129.00		\$40,129.48
Storehouses, health.....	25,471.15	22,924.00		2,547.15
Miscellaneous buildings, health.....	240,407.94	35,583.00	\$75,000.00	129,824.94
Schoolhouses.....	492,271.23	443,044.00		49,227.23
Post offices.....	35,982.62	8,995.00		26,987.62
Courthouses, police and fire stations, etc.....	101,927.50	50,964.00		50,963.50
Real estate:				
Canal construction and flooded areas.....	891,707.06			891,707.06
Auxiliary works and buildings.....	146,258.94			146,258.94
Depopulation of Canal Zone.....	2,336,889.63			2,336,889.63
Joint land commission expenses.....	356,006.61			356,006.61
Miscellaneous:				
Purchase from New Panama Canal Co.....	38,720,190.16			38,720,190.16
Investment, Panama R. R. stock.....	155,818.24			155,818.24
Concession from Republic of Panama.....	10,000,000.00			10,000,000.00
Relocation of Panama R. R.....	9,800,626.46			9,800,626.46
Presentation of launch Louise to French Government.....	13,500.00			13,500.00
Canal protection, 1917-18.....	25,236.79			25,236.79
Grand total.....	355,734,673.75	235,171,123.00	19,269,241.73	101,294,309.02

TABLE NO. 15.—*Defense capital expenditures to June 30, 1922.*

Prism excavation—		Sanitary ditches.....	\$199,706.53
Gatun to sea.....	\$237,482.88	Playgrounds.....	13,902.41
Gatun to Pedro Miguel.....	2,141,358.67	Administration building, Balboa Heights.....	306,211.51
Pedro Miguel to sea.....	388,049.34	District court and law department office, Ancon.....	65,446.39
Gatun Locks.....	1,208,953.05	Shop and store office.....	238,553.94
Pedro Miguel Locks.....	638,569.30	Terminal office building, Balboa.....	3,225.42
Miraflores Locks.....	867,655.23	Shops—	
Gatun Spillway.....	99,317.86	Balboa.....	3,795,269.32
Miraflores Spillway and East Dam.....	89,133.95	Cristobal.....	164,147.93
Gatun-Mindi Levee.....	2,813.01	Storehouses.....	475,934.74
Gatun Dam.....	196,462.60	Hotels and mess halls.....	239,409.87
Trinidad River Dam.....	1,324.47	Quarters—	
Pedro Miguel Dams.....	6,633.66	Gold.....	1,351,269.07
Miraflores West Dam.....	23,195.78	Silver.....	269,685.74
La Boca Locks and Dams (abandoned).....	748,054.48	Miscellaneous buildings.....	543,700.28
Colon East Breakwater.....	3,771,111.74	Ancon Hospital.....	435,325.80
Colon West Breakwater.....	85,506.42	Colon Hospital.....	63,876.90
Naos Island Breakwater.....	20,312.78	Dispensaries.....	40,303.97
Aids to navigation.....	93,388.54	Asylums.....	128,506.16
Floating caisson.....	20,872.15	Quarantine stations.....	40,129.48
Power-transmission system.....	10,055.46	Storehouses, health.....	2,547.15
Coaling station—		Miscellaneous buildings, health.....	129,824.94
Balboa.....	2,264,568.35	Schoolhouses.....	49,227.23
Cristobal.....	3,179,797.59	Post offices.....	26,987.62
Dry dock—		Courthouses, police and fire stations, etc.....	50,963.50
Balboa.....	3,376,647.49	Canal construction and flooded areas.....	891,707.06
Cristobal.....	23,475.51	Auxiliary works and buildings.....	146,258.94
Docks, piers, and wharves—		Depopulation of Canal Zone.....	2,336,889.63
Balboa.....	1,590,160.35	Joint land commission expenses.....	356,006.61
Cristobal.....	32,004.87	Purchase from New Panama Canal Co.....	38,717,335.97
Entrance basin, Balboa.....	489,480.39	Investment Panama R. R. stock.....	155,818.24
Inner harbor—		Concession from Republic of Panama.....	10,000,000.00
Balboa.....	3,265,207.04	Relocation of Panama R. R.....	9,800,626.46
Cristobal.....	237,101.43	Presentation of launch Louise to French Government.....	13,500.00
Preparatory work, Balboa terminals.....	1,808,921.65	Canal protection, 1917-18.....	25,236.79
Panama water-supply system.....	40,697.58	Equipment and property transferred to and from other departments of the Government.....	1,970,877.33
Other zone water-supply systems.....	155,190.03	Construction equipment.....	2,620,090.65
Zone sewage system.....	298,284.69	Construction material and supplies.....	2,225,000.00
Zone roadways.....	610,956.00	Loans to Panama R. R. Co.....	3,247,332.11
Fluviographs.....	3,427.02	Total.....	110,997,602.38
Permanent town sites—			
Ancon-Balboa.....	596,596.73		
La Boca.....	123,206.13		
Red Tank.....	2,614.43		
Pedro Miguel.....	96,797.08		
Gatun.....	1,776.56		
Cristobal.....	355,847.29		
Sanitary fills.....	636,732.11		

NOTE.—See reference in descriptive matter under "New accounting system," Section IV.

TABLE No. 16.—*Detail of canal fixed property.*

Channels:		Street lighting system.....	\$90,490.00
Gatun to sea.....	\$11,636,700.00	Office buildings:	
Gatun to Pedro Miguel.....	104,926,542.00	Administration.....	918,636.00
Pedro Miguel to sea.....	18,032,612.00	Terminal office, Balboa.....	77,409.00
Locks:		Storehouses.....	300,000.00
Gatun.....	34,844,900.35	Weather and hydrographic	
Pedro Miguel.....	15,362,560.75	structures.....	11,772.00
Miraflores.....	22,529,940.29	Health department buildings:	
• Spillways:		Ancon Hospital.....	1,305,975.00
Gatun.....	3,982,199.00	Colon Hospital.....	191,630.00
Miraflores.....	1,231,256.00	Dispensaries.....	120,910.00
Floating caisson.....	326,996.00	Asylums.....	128,813.56
Dams:		Quarantine stations.....	40,129.00
Gatun.....	9,626,678.00	Other health department build-	
Gatun-Mindí Levee.....	137,822.00	ings.....	58,507.00
Trinidad River.....	65,057.00	Civil government:	
Pedro Miguel.....	423,070.00	Schoolhouses.....	443,044.00
Miraflores.....	1,136,594.00	Post offices.....	8,995.00
Breakwaters:		Fire stations.....	21,644.00
Colon, West.....	4,189,810.00	Police stations and prisons.....	19,870.00
Naos Island.....	995,337.00	Courthouses.....	74,896.00
Aids to navigation.....	827,359.00	Clubs and playgrounds.....	114,498.00
Roads, streets, and sidewalks.....	979,766.35		
Storm sewers.....	200,000.00	Total.....	235,381,918.30

TABLE No. 17.—*Fixed business property, fiscal year ended June 30, 1922.*

Hydroelectric plant.....	\$1,667,953.44		
Miraflores steam power plant.....	307,862.44		
Substations.....	1,841,045.18		
Transmission system.....	1,355,733.38		
Distribution lines.....	1,101,419.90		
Total, electrical division.....		\$6,274,014.34	
Panama water system.....	1,732,396.35		
Colon water system.....	585,642.89		
Zone water system.....	568,279.37		
Total, municipal engineering division.....		2,886,318.61	
Waterworks and sewers, Panama.....	876,353.22		
Pavements.....	577,718.28		
Total, public works, Panama.....	1,454,071.50		
Less repayments.....	383,462.32		
Balance.....		1,070,609.18	
Waterworks and sewers, Colon.....	623,883.68		
Pavements.....	624,638.25		
Total, public works, Colon.....	1,248,521.93		
Less repayments.....	311,549.57		
Balance.....		936,972.36	
Incinerator:			
Balboa.....		100,000.00	
Cristobal.....		75,000.00	
Dry dock, Cristobal.....	50,000.00		
Roundhouse, Balboa.....	111,500.00		
Car and paint shop, Balboa.....	95,000.00		
Miscellaneous buildings.....	104.03		
Total, shops and dry docks.....		266,604.03	
Steamships:			
Colon.....	400,000.00		
Panama.....	400,000.00		
Ancon.....	600,000.00		
Cristobal.....	600,000.00		
Total, steamships.....		2,000,000.00	
Pier 18, Balboa.....	1,168,200.26		
Pier 6, Cristobal.....	2,201,979.74		
Total, docks, wharves, and piers.....		3,370,180.00	
Coaling plant, Cristobal.....		500,000.00	
Colliers.....	2,029,232.00		
Coal barges.....	1,600,000.00		
Total, colliers and coal barges.....		3,629,232.00	
Fuel-oil plants:			
Balboa.....	458,860.58		
Cristobal.....	560,457.59		
Total, fuel-oil plants.....		1,019,318.17	
Business storehouses.....		300,000.00	
Animal and motor transportation.....		23,583.00	

TABLE NO. 17.—*Fixed business property, fiscal year ended June 30, 1922—Continued.*

Gold quarters.....	\$3,439,729.01
Silver quarters.....	619,231.00
Garages.....	92,163.00
Boathouses.....	4,000.00
Tivoli Hotel.....	136,972.00
Restaurant:	
Balboa.....	60,000.00
Ancon.....	40,000.00
Ladies', Balboa Heights.....	1,500.00
Pedro Miguel.....	13,350.00
Cristobal.....	75,000.00
Old Washington, Cristobal.....	2,000.00
Silver mess:	
La Boca.....	5,000.00
Camp Bied.....	5,000.00
Grand total, business property.....	26,835,776.70

NOTE.—See descriptive matter under "General accounting," Sec. IV.

TABLE NO. 18.—*Detail of canal transit equipment.*

Floating equipment:	
Tugs.....	\$318,677.23
Supply boats.....	103,858.96
Launches.....	170,773.56
Dredges.....	1,474,686.60
Barges.....	1,048,141.52
Floating cranes.....	654,782.45
Crane boats.....	19,502.00
Graders.....	83,690.30
Drill barges.....	15,000.00
Air compressor barge.....	20,848.00
Coal hoist barge.....	2,112.00
Unwatering barge.....	30,076.85
Total, floating equipment.....	4,443,370.47
Other equipment:	
Road rollers.....	19,256.00
Steam shovels.....	6,450.30
Automobiles.....	1,430.64
Total, other equipment.....	27,136.94
Machinery and tools, lighthouse division, salvage section.....	13,164.86
Total, canal equipment.....	4,483,672.27

TABLE No. 19.—*Business property by divisions.*

	Total.	Fixed property.	Equipment.	Stores.	Cash.	Work in progress.	Unclassified expenses.	Unclassified credits.
Electric light and power system.....	\$6,292,491.97	\$6,274,014.34	\$6,717.72	\$11,716.71			\$43.20	
Electrical work.....	44,430.07		18,406.39	21,220.05			326.50	
Telephone and telegraph work.....	8,696.59		6,928.91	1,642.49			125.19	
Water systems.....	2,939,270.15	2,896,318.61	24,533.31	56,644.80			110,807.49	
Municipal engineering work.....	79,264.47		36,774.32	18,361.54			1,830.37	1 \$2,596.18
Public works, Panama.....								
Repayments.....		1,454,071.50						
Balance.....		1,333,462.32						
Public works, Colon.....	1,070,609.13	1,070,609.13						
Repayments.....		1,248,521.93						
Balance.....		1,311,549.57						
Balboa Incinerator.....	936,972.36	936,972.36						
Cristobal Incinerator.....	100,753.35	100,000.00				753.35		
Shops and dry dock.....	76,164.21	75,000.00				1,164.21		
Steamships.....	892,803.57	256,604.03	415,596.81	33,646.42		194,533.63	17,577.32	
Docks, wharves, and piers.....	2,000,000.00	2,000,000.00						
Coalging plants.....	3,370,180.00	3,370,180.00						
Fuel-oil plants.....	500,000.00	500,000.00						
Colliers and coal barges.....	3,629,232.00	3,629,232.00						
Business storehouses.....	1,088,160.60	1,019,318.17		85,933.13			117,090.70	138,848.27
Animal and motor transportation.....	247,415.20	23,533.00	223,549.60	17.40			72,794.17	
Motor-car repair shop.....	12,387.70		11,471.20	896.50			265.20	
Building repairs and construction.....	167,745.05			1,993.94				
Panama canal press.....	3,443,014.02	3,439,729.01	23,522.50	140,601.64		49,992.55	150,249.43	24,032.00
Gold quarters.....	620,283.33	619,231.00		875.31			124.90	131.99
Silver quarters.....	92,164.00	92,163.00		328.34		2,434.60	724.19	
Garages.....	4,000.00	4,000.00					1.00	
Boathouses.....	130.45							
District quartermaster supplies.....	298,434.49	138,972.00	58,599.48	298.32	\$2,051.85	11,432.79	25.87	120.00
Hotel Vol.....	70,437.12	60,000.00	10,130.62	13.50			12,660.96	
Balboa Restaurant.....	49,595.40	40,000.00	9,695.40					
Balboa Regis Ladies Restaurant.....	12,331.40	13,350.00	1,018.60		527.71			
Pedro Mendel Restaurant.....	13,368.11	12,000.00	2,368.00				11,061.29	
Old Wall Restaurant.....	9,874.70	2,000.00	8,374.70					
Cristobal Shops Restaurant.....	1,178.00		164.00					
La Bross Restaurant.....	6,823.46	5,000.00	1,947.40	1,64.00				
Camp Beard silver mess.....	7,990.38	5,000.00	2,943.35	124.00				
Hotel Aspinwall.....	12,129.01		12,129.01	122.97				

[illegible]

UNDISTRIBUTED BUSINESS CAPITAL.

The general store stock, the working cash, and all bills collectible are carried in the general accounts, and in order that each of the business units will be charged with its proportion of these items, on which a return should be made on the investment, the above account is opened. However, in view of the short period of operation during the fiscal year 1922 under the new operation scheme, these items have not been distributed against the business units. This will be done in the fiscal year 1923 by determining the amount of store material and supplies on the basis of amount of special material, such as repair parts, carried in the general storehouses for the business units and the value of the issues to the business units for the period of time that the general store stock is ordinarily maintained in advance of the issues. The charge to each unit for its proportion of the general working cash will be based upon the amount of cash required to meet the pay rolls and to make purchases and to pay other expenses. The outstanding and uncollected bills will be charged to the unit to which they belong.

TABLE No. 20.—*Property and equipment exchanged between The Panama Canal and Panama Railroad Co.*

Transferred from Panama Railroad to Panama Canal:		
Employees' quarters.....		\$286,338.50
Machinery, Cristobal roundhouse.....		3,255.00
Tools.....		2,500.00
Gamboa gravel plant.....		79,961.28
Tug Bolivar.....		26,000.00
Launch Dixie.....		2,918.83
Launch Flying Fish.....		1,000.00
Equipment and tools, launch Naos.....		31.17
Garbage scow No. 86.....		50.00
Four wooden floats.....		300.00
Wrecking crane No. 3.....		8,259.85
Locomotive crane No. 2.....		3,576.87
Railroad motor car No. 8.....		2,750.00
Steam locomotive No. 4.....		1,500.00
Wooden car.....		250.00
Orange peel bucket.....		300.00
Boiler No. A-74.....		90.00
Steel tank.....		300.00
2 motors.....		410.00
1 anchor.....		114.00
5 hoisting engines.....		1,400.00
Silver Clubhouse, Cristobal.....		21,758.94
Total.....		<u>443,064.44</u>
Transferred from Panama Canal to Panama Railroad:		
12 locomotives.....		88,560.15
86 Ligerwood cars, at \$523 each.....		44,978.00
50, 12-yard Oliver dump cars, at \$414.60 each.....		20,730.00
100, 19-yard Oliver dump cars, at \$604 each.....		60,400.00
220 steel flat cars, at \$538.60 each.....		118,492.00
3 locomotive cranes.....		11,018.29
1 floating pile driver.....		2,550.00
9 barges.....		80,790.64
4 launches.....		7,799.81
Miscellaneous machinery.....		7,745.55
Total.....		<u>443,064.44</u>

TABLE No. 21.—*Status of public works in cities of Panama and Colon June 30, 1922*

	Total.	Panama.	Colon.
Constructing cost:			
Waterworks and sewers.....	\$1,500,236.90	\$876,353.22	\$623,883.68
Pavements.....	1,202,334.38	577,718.28	624,616.10
Total.....	<u>2,702,571.28</u>	<u>1,454,071.50</u>	<u>1,248,499.78</u>
Maintenance, operation, and repairs, including proportion of zone system.....			
	2,128,119.29	1,176,755.59	951,363.70
Interest at 2 per cent per annum:			
Waterworks and sewers.....	340,716.72	184,786.80	155,929.92
Pavements.....	283,603.52	152,442.45	131,161.07
Zone system.....	157,864.58	101,097.85	56,766.73
Total.....	<u>782,184.82</u>	<u>438,327.10</u>	<u>343,857.72</u>
Total payable from water rentals.....	<u>5,612,875.39</u>	<u>3,069,154.19</u>	<u>2,543,721.20</u>
Water rental and deficit payments applied to—			
Maintenance, operation, and repairs.....	2,124,208.46	1,175,820.28	948,388.18
Interest.....	782,184.82	438,327.10	343,857.72
Proportion of capital cost.....	602,972.48	288,447.39	314,525.09
Total.....	<u>3,509,366.76</u>	<u>1,902,594.77</u>	<u>1,606,770.99</u>
Collections to be applied:			
Unpaid deficit bills—			
To repayments for maintenance, operation, and repair charges.....	935.31	935.31	
To capital cost.....	95,014.93	95,014.93	
Total charges covered by water rentals and deficits to date.....	<u>3,605,316.00</u>	<u>1,998,545.01</u>	<u>1,606,770.99</u>

TABLE NO. 21.—*Status of public works in cities of Panama and Colon June 30, 1922—Continued.*

	Total.	Panama.	Colon.
Capital cost reimbursable June 30, 1922:			
Waterworks and sewers.....	\$1,121,635.03	\$655,041.25	\$466,593.78
Pavements.....	885,924.36	415,567.93	470,356.43
Total.....	2,007,559.39	1,070,609.18	936,950.21
Amount capital cost reimbursable:			
From unpaid deficit bills.....	95,014.93	95,014.93	
From future surplus.....	12,975.52		12,975.52
Amount operation and maintenance:			
Charges reimbursable—			
From future surplus.....	2,975.52		2,975.52
From unpaid deficit bills.....	935.31	935.31	
Total amount due.....	2,103,509.63	1,165,559.42	936,950.21
Total reimbursements from collections.....	3,509,365.76	1,802,594.77	1,606,770.99
Total payable from water rentals.....	5,612,875.39	3,069,154.19	2,543,721.20

¹ Credit.

NOTE.—Under the original contracts made with the Republic of Panama in 1907, these expenses are to be reimbursed in 50 years from that date through the collection of water rentals in the two cities. Up to June 30, 1922, the amortization on the Panama City system amounted to \$383,462.32. The actual amount repaid, however, was only \$288,447.39, the balance being in outstanding bills against the Republic of Panama. Under the conditions of the contract, whenever the water rentals do not cover the cost of operating and maintaining the system, the interest on the investment, and the repayments, deficit bills are rendered and the unpaid amount to date is \$95,014.93. Besides this amount, the Panaman Government also owes a deficit in the cost of operating and maintaining the Panama City system amounting to \$935.31, making the total unpaid bills \$95,950.24.

The water rentals in the city of Colon have more than covered the charges for amortization, interest, and cost of operation, and the surplus, which would ordinarily be used to reduce the capital cost, is being expended for necessary improvements to some of the streets. In Panama City, however, there is invariably a deficit, and negotiations are under way to increase the rates for water.

TABLE NO. 22.—*Detail of canal transit material and supplies.*

Balboa store.....	\$4,100,018.94
Cristobal store.....	692,409.06
Corozal store.....	404,098.85
Paraiso store.....	766,438.23
Medical store.....	97,407.78
Stationery store, administration building.....	21,862.06
District quartermaster stores:	
Balboa.....	\$2,339.24
Pedro Miguel.....	¹ 107.84
Gatun.....	1,262.18
Cristobal.....	606.25
	4,099.83
Local purchases.....	1,218.52
Invoices in suspense.....	¹ 90.13
Material drawn by division not yet charged to the work.....	43,723.18
Total.....	6,131,186.32
Less reserve for war-price reductions.....	1,524,018.78
Book value of stores on hand.....	4,607,167.54

¹ Credit.

The above does not include materials and supplies in the hands of business divisions, which are shown in Table No. 19.

The item deducted at the foot of the statement as a reserve for store stock reduction is the balance of the old price difference account which was started during the war in order to create a reserve for the adjustment of store stock values and prices after the war. When the prices on the material and supplies were gradually rising the stock on hand was increased at an average price on the basis of the cost of the new material received and this account credited to build up a reserve for future fluctuations in prices downward. During the fiscal year 1922 this account has also been credited with an inventory adjustment representing the difference between the book value of stock on hand August 1, 1921, and the actual inventory value as of that date. In the adjustment of the capital accounts the sum of \$2,225,000, representing construction material on hand at the completion of the canal, was charged off to the national defense account to the credit of this account. In an effort to dispose of the surplus stock of the so-called "war material," considerable reductions have been made in the prices and the sum total of these reductions is charged to the price difference account. It is believed that the change in store stock values and the disposition of the surplus can be made gradually by using this reserve account without affecting the operating expenses of either transit or business divisions. The net book value of material and supplies on hand June 30, 1921, amounted to \$9,323,072.94. At the end of the fiscal year 1922 the book value of material on hand in the general store houses and with both transit and business divisions, taking the price difference reserve into consideration, amounted to \$5,244,303.61.

TABLE NO. 23.—Receipts, issues, and transfers of stores and purchases charged to divisions during fiscal year 1922.¹

Receipts by—	
Purchase.....	\$1,459,306.00
Transfer.....	3,054,691.01
Manufacture.....	191,584.60
Issues by—	
Issues.....	3,680,680.79
Transfers.....	1,870,533.30
Sales.....	974,500.19
Purchases direct to divisions.....	1,012,465.72
Regular stock in storehouses July 1, 1921.....	8,515,384.99
Material in hands of divisions July 1, 1921.....	797,180.35
Regular stock in storehouses July 1, 1922.....	5,510,260.15
Material in hands of divisions July 1, 1922.....	680,859.25

¹ This table is summarized. Figures are given in greater detail in table of same number in annual report of accounting department.

TABLE NO. 25.—Statement of canal expenses, earnings, and net expenses.

	Canal expenses.	Earnings.	Net canal expenses.
Executive department:			
Executive offices.....	\$392,115.39	\$176,519.87	\$215,595.52
Advertising.....	9,183.13	90.60	9,092.53
Cables and radiograms.....	2,932.44	278.10	2,654.34
Shipping commissioner.....	39,251.12	.70	39,250.42
Canal record.....	11,960.79	272.90	11,687.89
Land office.....	2,400.00		2,400.00
Legal services.....	394.42		394.42
Railroad motor cars.....	18,980.57	16,598.58	2,381.99
Clubs and playgrounds.....	202,346.65	55,099.03	147,247.62
Total.....	679,664.50	248,859.78	430,704.73
Accounting department:			
Accounting office.....	385,933.69	221,847.37	164,086.32
Paymaster's office.....	45,606.88	21,135.84	24,471.04
Collector's office.....	46,484.70	22,539.72	23,944.98
Total.....	478,025.27	265,522.93	212,502.34
Washington office:			
Chief of office.....	55,872.26	26.63	55,845.63
Purchasing bureau.....	119,892.26	1,000.74	118,891.52
Assistant auditor's office.....	32,389.91		32,389.91
Disbursing clerk's office.....	9,262.88		9,262.88
Total.....	217,417.31	1,027.37	216,389.94
Civil government:			
Civil affairs.....	15,464.22	152.16	15,312.06
Customs.....	27,700.86	1,662.48	26,038.38
Posts.....	180,185.31	7,561.51	172,623.80
Schools.....	194,609.24	4,968.60	189,640.64
Fire protection.....	104,611.22	105.43	104,505.79
Police and prisons.....	369,184.12	52,978.87	316,205.25
District court.....	25,343.70	23.22	25,320.48
District attorney.....	11,837.04	1.36	11,835.68
Marshal.....	8,870.34		8,870.34
Magistrates' courts.....	15,548.28		15,548.28
Total.....	953,354.33	67,453.63	885,900.70
Health department:			
Chief health office.....	19,254.73	40.48	19,214.25
Ancon hospital.....	542,673.17	282,755.35	259,917.82
Colon hospital.....	98,156.50	48,174.02	49,982.48
Dispensaries.....	53,358.84	13,479.36	39,879.48
Corozal farm and asylum.....	125,988.12	115,024.95	10,963.17
Palo Seco leper asylum.....	38,497.10	12,483.25	26,013.85
Santo Tomas hospital.....	14,231.08	249.14	13,981.94
Medical storehouse.....	31,786.00	21,228.55	10,557.45
Quarantine service.....	71,000.45	31,482.90	39,517.55
Sanitation, Panama.....	59,188.43	10,623.00	48,565.43
Street cleaning and garbage collection, Panama.....	71,657.93	38,094.20	33,563.73
Sanitation, Colon.....	35,980.45	9,505.81	26,474.64
Street cleaning and garbage collection, Colon.....	64,883.06	37,216.43	27,666.63
Sanitation, Canal Zone.....	120,373.95	31,902.77	88,471.18
Total.....	1,347,029.81	652,260.21	694,769.60

TABLE NO. 25.—Statement of canal expenses, earnings, and net expenses—Continued.

	Canal expenses.	Earnings.	Net canal expenses.
Office engineer.....	\$39,834.89	\$16,821.73	\$23,013.16
Meteorology and hydrography.....	38,642.79	1,294.45	37,348.34
Surveys.....	43,282.50	3,796.52	39,485.98
Storehouses, general:			
Balboa storehouse.....	354,353.21	121,767.88	232,585.33
Administration building storehouse ¹	1,543.05		1,543.05
Paraiso storehouse ¹	6,427.51	* 1,613.98	8,041.49
Cristobal storehouse ¹	24,188.68	3.60	24,185.08
Total.....	386,512.45	120,157.50	266,354.95
Public buildings and grounds:			
Superintendence.....	11,944.02	10,362.35	1,581.67
Balboa.....	383,944.57	203,576.61	180,367.96
Pedro Miguel.....	71,429.84	45,126.67	26,303.17
Gatun.....	57,400.21	33,719.27	23,680.94
Cristobal.....	188,962.93	95,169.29	93,793.64
Total.....	713,681.57	387,954.19	325,727.38
Street lighting.....	10,054.09		10,054.09
Water for municipal purposes.....	85,341.12	21,331.85	64,009.27
Roads, streets, and sidewalks.....	81,089.63		81,089.63
Storm sewers.....	26,914.86		26,914.86
Miscellaneous general expenses:			
Transportation track and maintenance.....	26,129.83	2,468.77	23,661.06
Recruiting and repatriating employees.....	48,439.98	8,404.19	40,035.79
Transportation, employees on Isthmus.....	144,000.00	19,380.64	124,619.36
Compensation injured employees.....	1,200.00		1,200.00
Total.....	219,769.81	30,253.60	189,516.21
Marine division:			
Marine superintendent.....	2,569.20		2,569.20
Port captain, Balboa.....	55,440.08	686.49	54,753.59
Port captain, Cristobal.....	46,482.29	640.40	45,841.89
Board of admeasurers.....	40,105.30	900.00	39,205.30
Board of local inspectors.....	9,231.52	2,426.55	6,804.97
Pilots, Balboa.....	137,796.56	36,008.00	101,788.56
Pilots, Cristobal.....	131,218.79	107,390.00	23,828.79
Tugs and launches, Balboa.....	263,502.20	125,490.25	138,011.95
Tugs and launches, Cristobal.....	244,131.20	185,729.25	58,401.95
Handling lines, Balboa.....	39,695.01	40,143.00	* 447.99
Handling lines, Cristobal.....	45,048.75	45,948.00	* 899.25
Lighthouse subdivision.....	263,088.96	114,991.81	148,097.15
Total.....	1,278,311.86	660,353.75	617,958.11
Lock operation and maintenance:			
Gatun Locks—			
Superintendence.....	40,228.67		
Operation.....	222,349.97		
Maintenance.....	83,988.05		
Total Gatun Locks.....	346,566.69	415.63	346,151.06
Pedro Miguel Locks—			
Superintendence.....	21,536.21		
Operation.....	160,255.60		
Maintenance.....	80,078.01		
Total Pedro Miguel Locks.....	261,869.82	119.09	261,750.73
Miraflores Locks—			
Superintendence.....	28,209.86		28,209.86
Operation.....	221,257.54		221,257.54
Maintenance.....	263,049.91		263,049.91
Total Miraflores Locks.....	512,517.31		512,517.31
Miraflores spillway.....	773.35		773.35
Total locks.....	1,121,727.17	534.72	1,121,192.45
Gatun Dam, maintenance.....	38,390.25	62.44	38,327.81
Gatun spillway.....	3,038.95		3,038.95
Damage to vessels in locks.....	5,326.98		5,326.98
Damage to vessels in canal.....	13,221.50		13,221.50

¹ Three months only.

* Credit.

TABLE NO. 25.—*Statement of canal expenses, earnings, and net expenses—Continued.*

	Canal expenses.	Earnings.	Net canal expenses.
Channel maintenance:			
Atlantic entrance.....	\$2,629.39		\$2,629.39
Gatun Lake.....	238.98		238.98
Gaillard Cut.....	1,079,026.65		1,079,026.65
Miraflores Lake.....	122.29		122.29
Pacific entrance.....	729,381.62		729,381.62
Balboa Harbor.....	52,943.94		52,943.94
Removal floating obstructions.....	34,055.99		34,055.99
Floating derricks, maintenance.....	65,097.36		65,097.36
Dredging division work.....	8,378.86	\$11,081.93	1,703.07
Total.....	1,971,875.08	11,081.93	1,960,793.15
Total.....	9,752,406.73	2,488,766.60	7,263,640.13
Amortization.....	350,000.00		350,000.00
Depreciation.....	305,377.50		305,377.50
Grand total.....	10,407,784.23	2,488,766.60	7,919,017.63

¹ Credit.

NOTE.—The above table shows the canal expenses and the revenues which are now applied to reduce the expenses, after which the balance is repaid to appropriations.

See also descriptive matter under "New accounting system," Section IV, for amortization.

When the new accounts were opened as of April 1, 1922, a business surplus was set up amounting to \$1,100,309.54, made up of the net surplus of \$480,724.95, shown in table No. 19 of the annual report for 1921, and the interest on the investment in public works in Panama and Colon which had not heretofore been taken up as a canal revenue. During the fiscal year 1922 the miscellaneous receipt revenues exceeded the net canal expenses by \$3,466,574.69. Net profits on business operations, including the interest on public works in Panama and Colon, amounted to \$323,259.16. Of this amount, \$58,457.32 represents the interest on public works which is covered into miscellaneous receipts quarterly. The balance of \$264,801.84, representing the profit on business operations, will now be covered in as miscellaneous receipts.

TABLE NO. 26.—*Detail of canal transit revenues.*

Tolls.....	\$11,193,383.47
Taxes, fees, fines, licenses.....	45,201.62
Postal receipts.....	116,847.24
Interest on bank balances.....	25,000.00
Proceeds of Government property.....	4,416.00
Miscellaneous.....	743.99
Grand total.....	11,385,592.32

NOTE.—Tolls actually collected on vessels transiting the canal amounted to \$11,198,008.51, but from this amount must be subtracted refunds of \$4,625.04, representing overcharges during prior years. Court fees and fines amounted to \$24,732.10; licenses and taxes, \$20,176.02.

TABLE NO. 27.—*Statement of business expenses, revenues, and profit and loss, fiscal year 1922.*

	Expenses.	Revenues.	Profit or loss.	Fixed capital charge 3 per cent per annum.
Electric-lighting power system.....	\$293,512.22	\$360,653.40	\$67,141.18	\$188,774.76
Electrical work.....	99,804.81	94,343.84	¹ 5,460.97	1,332.60
Telephone, telegraph, and signal system.....	201,422.88	203,216.02	1,793.14	260.90
Water system.....	470,790.45	475,039.22	4,248.77	70,713.90
Municipal engineering work.....	314,384.26	314,246.46	¹ 137.80	2,377.93
Public works, Panama.....	163,736.47	163,736.47		² 34,793.46
Public works, Colon.....	118,922.17	118,922.17		² 23,663.86
Incinerator, Cristobal.....	22,185.79	22,498.21	312.42	2,284.93
Dry docks and shops, revenues:				
Shop work.....		1,963,789.31		
Dry dockage, Balboa.....		87,588.62		
Dry dockage, Cristobal.....		21,844.23		
Total.....	1,975,233.49	2,073,222.16	97,988.67	26,784.11
Docks, wharves, and piers.....	21,620.81	44,833.58	23,212.77	101,105.40

¹ Loss.² Figures at 2 per cent in accordance with contract.

TABLE NO. 27.—Statement of business expenses, revenues, and profit and loss, fiscal year 1922—Continued.

	Expenses.	Revenues.	Profit or loss.	Fixed capital charge 3 per cent per annum.
Fuel oil plants:				
Handling fuel oil	\$189,038.46	\$254,019.80	\$64,981.34	.....
Fuel oil sales	223,481.07	186,488.64	36,992.43	.....
Tank rentals	17,426.27	24,319.54	6,893.27	.....
Total	429,945.80	464,827.98	34,882.18	\$32,644.82
Business storehouses	1,388,944.36	1,398,004.34	9,059.98	9,059.98
Animal and motor transportation	194,420.40	209,962.27	15,541.87	7,422.46
Motor car repair shop	20,784.07	22,748.11	1,964.04	371.03
Building repairs and construction	158,713.77	161,345.33	2,631.56	.....
Panama Canal press	73,627.79	70,978.07	2,649.72	5,082.35
Quarters, gold	123,327.17	207,944.91	84,617.74	21,526.00
Quarters, silver	183,798.02	175,176.53	8,621.49	18,608.51
Garages	4,123.78	12,421.17	8,297.39	2,764.92
Boathouses	326.08	674.61	348.53	120.00
District quartermaster supplies:				
Fuel		17,861.23		
Gasoline		11,928.47		
General supplies		1,265.68		
Exchange of furniture		9,056.85		
Total	55,004.04	40,112.23	14,891.81	.....
Hotel Tivoli	187,122.06	169,653.06	17,469.00	6,253.03
Restaurants	437,325.95	374,802.81	62,523.14	7,522.90
Building rentals	3,733.32	9,051.36	5,318.05	.....
Land rentals	5,937.01	23,206.09	17,269.08	.....
Equipment rentals	9,536.25	9,596.77	60.52	.....
Market rentals	226.61	346.33	119.72	.....
Sand and gravel	10,282.32	11,800.40	1,508.08	7,828.65
Sale of government property	2,229.94	2,465.00	235.06	.....
Nautical charts and publications	336.30	336.30	.....	.....
Fortifications division	452,600.02	452,605.05	5.03	171.04
Grand total	7,423,968.41	7,688,770.25	264,801.84	837,058.93

¹ Loss.² Six months.

NOTE.—The above table does not include the interest on the investment in public works in the cities of Panama and Colon, and the interest on the zone proportion of the waterworks chargeable to Panama, amounting to \$58,457.32. This interest is covered into miscellaneous receipts quarterly, and was therefore removed to the surplus account prior to closing the books. The table also shows for comparative purposes, what 3 per cent on the investment in each business division would amount to, but the comparison is not a fair one in view of the fact that the divisions have not had a chance to adjust their rates and revenues to the new order of things. The fixed capital charge shown against the water system represents 3 per cent of the investment after deducting the amount charged to the Republic of Panama, which was fixed at 2 per cent by contract. The fixed capital charge shown against public works in Panama and public works in Colon represents 2 per cent on the investment, plus the amount chargeable on the zone proportion and, as stated before, the revenue is not shown in this statement, having been transferred to the surplus fund.

The loss shown on sale of fuel oil, amounting to \$36,992.43, was due to the fact that the price for fuel oil during the past year has been maintained at a little below cost in order to dispose of the high-priced oil on hand; the outside oil companies who are maintaining stocks of fuel oil here for sale are selling their oil at considerably lower prices than the present stock value of Panama Canal fuel oil. This loss, however, was offset by the profit made on pumping and handling fuel oil for outside companies.

Under Executive order dated December 3, 1921, beginning January 1, 1922, charges were made against "gold" employees for house rent, electric current, stove fuel, water, etc., and these collections have had a direct effect on the cost of operating the canal, as well as increasing the business revenues. The total amount collected was \$231,129.46. The house rental rates were fixed to include amortization and depreciation of the buildings occupied, a certain amount for repairs and maintenance of buildings, and the cost of removing garbage. The charges for the other items were fixed separately. However, the first column in the table under the heading of "Rent" includes the janitor service, lights, and water in bachelor quarters. The janitor service for the six months amounts to \$24,215.10; the electric current in bachelor quarters amounts to \$5,049, and the water to \$901.50. Deducting these items from the first column leaves the net amount of house rental (including garbage disposal) at \$143,416.17.

Besides the rent and other charges collected from employees by pay-roll deduction, the employees have paid for a considerable number of other items which were formerly furnished free, such as electric bulbs, kerosene used in lieu of other fuel, etc. A considerable amount of rent and other charges were also collected from nonemployees occupying Panama Canal quarters, and the revenue shown in this table includes the rent charged to departments and divisions for such of their employees as are not required to pay rent under the conditions of the employment. The cost of operating silver quarters is in excess of the rent collected from silver employees. The rental rates charged silver employees have a direct bearing on the wages paid to that class of labor.

The restaurants are being operated under contract so that the figures shown are not for the full fiscal year. The loss shown under this heading was practically the differential which has been maintained in connection with subsidizing bachelor employees as compared with the perquisites allowed married employees prior to January 1, 1922.

See also reference under "New accounting system" in Section IV.

TABLE NO. 28.—*Comparison of expenses, revenues, and surplus to date.*

CANAL TRANSIT OPERATIONS.

	Tolls.	Taxes, licenses, fees, fines, postal receipts, etc.	Total transit revenues.	Net canal transit expenses.	Net revenues.
1914.....	\$14,618.68		\$14,618.68	\$166,030.91	¹ \$151,412.23
1915.....	4,343,383.69		4,343,383.69	4,123,128.09	220,255.60
1916.....	2,399,830.42	\$158,711.96	2,558,542.38	6,909,750.15	¹ 4,441,207.77
1917.....	5,631,781.66	176,617.04	5,808,398.70	6,788,047.60	¹ 979,648.90
1918.....	6,264,765.71	147,077.57	6,411,843.28	5,920,342.94	491,500.34
1919.....	6,156,118.95	197,898.03	6,354,016.98	6,112,194.77	241,822.21
1920.....	8,493,082.56	442,789.01	8,935,871.57	6,548,272.43	2,387,599.14
1921.....	11,261,919.31	778,197.39	12,040,116.70	9,328,300.14	2,711,816.56
Total.....	44,565,500.98	1,901,291.00	46,466,791.98	45,986,067.03	480,724.95
To business surplus.....		480,724.95	480,724.95		480,724.95
	44,565,500.98	1,420,566.05	45,986,067.03	45,986,067.03	
1922.....	11,193,383.47	199,208.85	11,392,592.32	7,919,017.63	3,466,574.69
	55,758,884.45	1,612,774.90	57,371,659.35	53,905,084.66	3,466,574.69

CANAL BUSINESS OPERATIONS.

	Business revenues.	Business expenses.	Net revenues.
1914.....	\$600,298.32	\$605,720.71	¹ \$5,422.39
1915.....	2,135,074.92	2,191,475.70	¹ 56,400.78
1916.....	6,488,521.61	6,476,023.17	11,898.44
1917.....	7,579,588.44	7,540,180.78	39,427.66
1918.....	10,324,071.91	10,317,012.35	6,159.56
1919.....	13,684,881.18	13,623,853.92	61,027.26
1920.....	14,705,371.82	14,465,085.69	239,686.13
1921.....	15,232,317.08	14,668,105.88	564,211.20
Total.....	70,840,125.28	69,979,538.20	922,410.25
Applied to offset excess of transit expenses over transit revenues prior to July 1, 1921.....			441,685.30
Net revenues carried to surplus.....			480,724.95
Interest on public works in Panama and Colon, etc., not included in net revenues in prior years.....			619,584.59
Surplus to June 30, 1921.....			1,100,309.54
1922.....	7,747,227.57	7,423,968.41	323,259.16
Total.....	78,587,352.85	77,403,506.61	1,423,568.70

¹ Deficit.² The loss during fiscal years 1914 and 1915 was charged to maintenance and operation, The Panama Canal, and is included in the net canal expenses shown above.

The surplus for fiscal year 1922 includes \$58,457.32, representing interest on public works, Panama and Colon, which has already been covered into the Treasury as miscellaneous receipts, leaving \$264,801.84 to be covered in.

When the new accounts were opened as of Apr. 1, 1922, a business surplus was set up amounting to \$1,100,309.54, made up of the net surplus of \$480,724.95, shown in Table No. 19 of the annual report for 1921, and the interest on the investment in public works in Panama and Colon, which had not heretofore been taken up as a canal revenue. During the fiscal year 1922 the miscellaneous receipt revenues exceeded the net canal expenses by \$3,466,574.69. Net profits on business operations, including the interest on public works in Panama and Colon, amounted to \$323,259.16. Of this amount \$58,457.32 represents the interest on public works, which is covered into miscellaneous receipts quarterly. The balance of \$264,801.84, representing the profit on business operations, will now be covered in as miscellaneous receipts.

TABLE NO. 29.—*Pay-roll deductions from employees for rent, etc.*¹

Rent.....	\$173,581.77
Electric current.....	26,756.42
Water.....	11,592.37
Fuel.....	11,498.18
Miscellaneous services.....	7,700.72
Total.....	231,129.46

¹ Charging of rent for quarters and related services for gold employees was begun Jan. 1, 1922. This table is summarized. Figures are given in greater detail in table of same number in annual report of accounting department.

TABLE No. 30.—*Detail of reserves for depreciation.*

Canal transit property:	
Equipment—	
Tugs.....	\$316,086.66
Supply boats.....	32,320.92
Launches.....	70,896.27
Dredges.....	407,127.76
Barges.....	477,821.58
Crane boat.....	16,149.21
Graders.....	16,111.90
Drill barges.....	1,156.25
Air-compressor barge.....	7,507.40
Coal-hoist barge.....	1,653.62
Road roller.....	11,830.92
Steam shovels.....	667.50
Automobiles.....	459.13
Total equipment.....	\$1,359,889.12
Fixed property.....	305,377.50
Total canal transit property.....	1,665,266.62
Business property:	
Equipment—	
Automobiles.....	158,102.19
Shop equipment.....	21,336.72
Total equipment.....	179,438.91
Fixed property—	
Electric light and power systems.....	1,037,428.18
Water system.....	25,000.00
Fuel-oil plants.....	229,778.54
Hotels.....	6,848.58
Restaurants.....	1,932.15
Silver messes.....	499.98
Total fixed property.....	1,301,487.43
Total business property.....	1,480,926.34
Grand total reserves for depreciation.....	3,146,192.96

TABLE No. 31.—*Detail of reserve for repairs.*

Canal transit property:	
Equipment—	
Tugs.....	\$262,121.53
Supply boats.....	8,380.66
Launches.....	6,282.37
Dredges.....	200,825.39
Barges.....	153,888.54
Crane boat.....	3,822.67
Graders.....	15,602.28
Drill barges.....	1,829.33
Coal-hoist barge.....	675.93
Road rollers.....	1,496.64
Total equipment.....	\$654,915.34
Fixed property, baseball stadium.....	179.43
Total canal transit property.....	655,094.77
Business property:	
Equipment, shops, and dry docks.....	63,093.71
Fixed property—	
Electric light and power systems.....	12,761.32
Shops and dry docks.....	8,119.87
Fuel-oil plants.....	199,927.27
Hotels.....	1,932.19
Total fixed property.....	222,740.65
Total business property.....	285,834.36
Grand total reserve for repairs.....	940,929.13

TABLE No. 32.—*Reserve for gratuity due employees.*

Electrical division, electric light and power systems.....	\$89,843.00
Municipal engineering division, water system.....	49,702.18
Mechanical division, shops, and dry docks.....	251,071.77
Constructing quartermaster, building repairs and construction.....	23,455.38
Fortifications.....	37,734.57
Total.....	431,806.90

TABLE NO. 33.—*Detail of cost of production and distribution of electric current.*

	Fiscal year 1921.	Fiscal year 1922.
Gatun hydroelectric power plant:		
Operation and maintenance.....	\$62,123.85	\$45,207.36
Reserve for depreciation.....	51,080.00	52,800.00
Reserve for repairs.....	1,395.00	2,850.00
Total cost.....	114,598.85	100,857.36
Kilowatt hours.....	59,376,112	49,249,471
Unit cost.....	\$0.0019	\$0.0020
Miraflores steam-electric power plant: ¹		
Operation and maintenance.....	\$91,127.86	\$84,656.98
Reserve for depreciation.....	25,600.00	26,400.00
Reserve for repairs.....	765.00	1,590.00
Total cost.....	117,492.86	112,646.96
Kilowatt hours.....	524,014	18,394
Unit cost.....	\$0.2242	\$6.1241
Total cost, both plants.....	\$232,091.71	\$213,504.28
Total kilowatt hours.....	59,900,126	49,267,865
Average cost per kilowatt hour.....	\$0.0039	\$0.0043
Operation of substations:		
Balboa.....	\$24,728.97	\$18,599.03
Cristobal.....	24,500.95	18,286.78
Gatun.....	26,168.07	24,138.34
Miraflores.....	27,454.24	25,544.19
Gamboa.....	1,651.38	2,231.41
Reserve for depreciation.....	52,620.00	55,200.00
Reserve for repairs.....	900.00	1,800.00
Total cost.....	158,023.61	145,799.75
Transmission lines:		
Inspection and maintenance.....	34,703.32	36,551.75
Reserve for depreciation.....	27,000.00	27,600.00
Reserve for repairs.....	2,940.00	5,910.00
Total cost.....	64,643.32	70,061.75
Distribution lines:		
Inspection and maintenance.....	39,414.57	45,641.80
Reserve for depreciation.....	38,100.00	43,800.00
Total cost.....	77,514.57	89,441.80
Grand total cost distributed power.....	532,273.21	518,807.58
Total kilowatt hours.....	59,900,126	49,267,865
Unit cost.....	\$0.0089	\$0.0105

¹ Miraflores steam power plant is generally operated as a reserve generative station. During the fiscal year 1921 peak loads were carried throughout the year which could not be generated at the hydroelectric station, and during the months of October and November picked up additional load account of auto-transformer failure at the hydroelectric station. During the fiscal year 1922 the Miraflores steam power plant was maintained on the basis of stand-by service and was required to carry load on 15 occasions.

TABLE NO. 34.—Detailed cost of production of water per 1,000 gallons.

	Fiscal year 1921.			Fiscal year 1922.		
	Total cost.	Quantity.	Unit cost.	Total cost.	Quantity.	Unit cost.
Ancon-Balboa-Panama system:						
Operation, pump station, Gamboa.	\$58,951.27	3,808,240	\$0.0155	\$61,605.72	3,325,480	\$0.0185
Operation, pump station, Balboa.	42,928.33	2,670,160	.0161	41,654.45	2,143,772	.0194
Operation, filtration plant, Miraflores.	92,169.75	3,400,869	.0271	81,262.65	2,786,935	.0292
Maintenance, water mains.	68,890.67	3,808,290	.0181	59,425.87	3,325,480	.0179
Total.	262,940.02	3,808,240	.0768	243,948.69	3,325,480	.0850
Distribution of water:						
Panama.		1,091,256			1,048,626	
Canal Zone, other than Army and Navy.		2,265,563			1,966,249	
U. S. Army and Navy, Fort Clayton, Corozal, and Balboa.		407,168			281,608	
Commercial shipping.		25,194			20,264	
U. S. Army and Navy vessels.		18,299			8,458	
Panama R. R. steamships.		760			275	
Total.		3,808,240			3,325,480	
Gatun system:						
Operation, pump station, Agua Clara.	20,655.37	451,394	.0458	21,758.51	380,627	.0572
Operation, filtration plant, Agua Clara.	19,364.87	451,394	.0429	14,204.11	380,627	.0373
Maintenance, reservoir, Agua Clara.	12,974.80	451,394	.0287	8,032.07	380,627	.0211
Maintenance, water mains.	8,462.08	451,394	.0187	6,671.27	380,627	.0175
Total.	61,457.12	451,394	.1361	50,665.96	380,627	.1331
Distribution of water:						
Canal Zone, other than U. S. Army.		204,657			181,043	
U. S. Army, Fort Davis, and Fort Sherman.		246,737			199,584	
Total.		451,394			380,627	
Cristobal-Colon system:						
Operation, pump station, Mount Hope.	32,342.97	1,934,775	.0167	32,412.50	1,552,495	.0209
Operation, filtration plant, Mount Hope.	27,978.01	1,934,775	.0145	22,648.22	1,552,495	.0146
Maintenance, reservoir, Mount Hope.	14,572.52	1,934,775	.0075	9,835.63	1,552,495	.0063
Maintenance, water mains.	24,543.08	1,934,775	.0127	21,732.93	1,552,495	.0140
Total.	99,436.58	1,934,775	.0514	86,629.28	1,552,495	.0558
Distribution of water:						
Colon.		733,379			648,722	
New Cristobal.		52,929			46,505	
Canal Zone, other than U. S. Army.		757,860			521,607	
U. S. Army and Navy, submarine base, Fort Randolph, France Field, and Cristobal.		275,655			245,704	
Commercial shipping.		74,309			65,376	
U. S. Army and Navy vessels.		14,302			5,963	
Panama R. R. steamships.		26,341			18,618	
Total.		1,934,775			1,552,495	
Additional raw water furnished to cold-storage plant direct from reservoir and through mains for short distance only, estimated.		550,000			730,000	
Grand total.		2,484,775			2,282,495	

TABLE NO. 35.—*Dredging operations.*

	Gafflard Cut.			Pacific entrance.		Balboa inner harbor.	
	Total cost.	Cost.	Unit cost.	Cost.	Unit cost.	Cost.	Unit cost.
Dredging:							
Dipper dredges.....	\$501,339.72	\$287,863.98	\$0.2004	\$198,076.74	\$0.4464	\$15,399.00	\$0.5441
Suction dredges.....	223,985.82			211,201.81	.0980	12,784.01	.1362
Total dredging.....	725,325.54	287,863.98	.2004	409,278.55	.1575	28,183.01	.2308
Towing:							
Tugs and scows.....	618,546.00	447,267.97	.3114	160,643.02	.3620	10,635.01	.3757
Miscellaneous floating equipment.....	54,929.80	26,273.72	.0182	27,320.21	.0105	1,335.87	.0109
Total towing.....	673,475.80	473,541.69	.3296	187,963.23	.0723	11,970.88	.0980
Other expenses:							
Hydraulic graders.....	65,977.15	65,977.15	.0459				
Pipe lines.....	37,104.51			35,672.93	.0165	1,431.58	.0152
Stuicing.....	15,103.44	15,103.44	.0105				
Blasting.....	1,788.43	1,788.43	.0012				
Drilling.....	346.09	346.09	.0002				
Surveys.....	46,131.62	31,100.25	.0216	13,556.75	.0052	1,474.62	.0120
Channel lights.....	494.79	494.79	.0003				
Dikes.....	1,491.16			1,491.16	.0006		
Water lines.....	314.94	314.94	.0002				
Total other expenses.....	168,752.13	115,125.09	.0794	50,720.84	.0195	2,906.20	.0238
Division overhead.....	180,883.15	98,034.20	.0682	78,137.74	.0300	4,711.21	.0385
Total.....	1,748,436.62	974,564.96	.6785	726,100.36	.2795	47,771.30	.3912
Indirect charges.....	195,959.45	104,461.69	.0727	86,325.12	.0332	5,172.64	.0423
Grand total.....	1,944,396.07	1,079,026.65	.7512	812,425.48	*.3127	52,943.94	.4336
Quantities excavated (cubic yards):							
Dipper dredges—							
Earth.....	592,810	432,710		147,800		12,300	
Rock.....	1,315,490	1,003,590		295,900		16,000	
Suction dredges, earth.....	2,247,400			2,153,600		93,800	
Total.....	4,155,700	1,436,300		2,597,300		122,100	

¹ \$83,043.86 of the cost of dredging at the Pacific entrance was paid from construction appropriation and the balance of \$729,381.62 was paid from maintenance and operation appropriation. The expenditure of \$83,043.86 is the last that will be made for construction from the construction appropriations, the balance in those appropriations having been released for transfer to the surplus fund.

TABLE NO. 36.—*Statement of money orders issued and paid by the Canal Zone and Canal Zone orders paid by other administrations, fiscal years 1907 to 1922, inclusive.*¹

Total Canal Zone money orders issued.....		\$63,901,523.56	Money-order funds:	
Total Canal Zone money orders paid.....		63,207,917.27	Cash on deposit with collector,	
			Panama Canal.....	\$878,098.52
Total Canal Zone orders outstanding unpaid.....		693,606.29	Cash due from post-masters.....	\$17,400.44
Due United States by the Canal Zone.....		201,508.79	Less fees included.....	40.97
Due Costa Rica by the Canal Zone.....		296.25		17,359.47
Due Martinique by the Canal Zone.....		26.00	Total.....	895,457.99
Overages.....		20.66		
Total.....		895,457.99		

¹ This table is summarized. Figures are given in greater detail in table of same number in annual report of accounting department.

TABLE NO. 37.—*Postal service—Statement showing the money-order business of the Canal Zone during the fiscal year ended June 30, 1922.*¹

Number of money orders issued, including deposit money orders.....	111,371
Amount of above.....	\$2,642,502.30
Interest paid on deposit money orders.....	9,085.58
Money orders paid by Canal Zone post offices:	
United States.....	215,240.75
Costa Rica.....	100.35
Canal Zone.....	1,233,330.06
Canal Zone money orders paid by:	
Martinique.....	133.40
Costa Rica.....	1,425.15
United States.....	1,663,933.12

¹ This table is summarized. Figures are given in greater detail in table of same number in annual report of accounting department.

TABLE NO. 38.—*Postal service—Statement of audited revenues, fiscal years 1907 to 1922, inclusive.*¹

Miscellaneous ²	\$11,491.67
Money-order fees.....	254,695.40
Stamp sales.....	1,321,806.70
Box rents ³	63,537.90
Newspaper postage.....	14,182.37
Total revenue.....	1,665,714.04
Interest on money-order funds ²	152,212.28

¹ This table is summarized. Figures are given in greater detail in table of same number in annual report of accounting department.

² Since 1917.

³ Since 1915.

TABLE NO. 39.—*Postal service—Statement of postal revenues, fiscal year ended June 30, 1922.*¹

Miscellaneous.....	\$2,152.09
Money-order fees.....	9,153.56
Stamp sales.....	93,683.24
Box rent.....	10,637.50
Newspaper postage.....	1,525.87
Total revenue.....	117,152.26
Interest on money-order funds.....	32,696.81

¹ This table is summarized. Figures are given in greater detail in table of same number in annual report of accounting department.

TABLE NO. 40.—*Postal Service—Statement of postal savings and deposit money order transactions for fiscal year ended June 30, 1922.*¹

Postal savings certificates:	
Balance July 1, 1921.....	\$458.00
Issued.....	
Paid.....	250.00
Balance unpaid June 30, 1922.....	208.00
Deposit money orders:	
Balance July 1, 1921.....	619,635.00
Issued.....	862,880.00
Paid.....	1,045,315.00
Balance unpaid June 30, 1922.....	437,200.00

¹ This table is summarized. Figures are given in greater detail in table of same number in annual report of accounting department.

TABLE NO. 43.—*Summary of income and expenses, bureau of clubs and playgrounds, July 1, 1921, to June 30, 1922.*

	Ancon.	La Boca.	Balboa.	Pedro Miguel.	Paraiso.	Gatun.	Gatun silver.
Soda fountain inventory, July 1, 1921.....	\$341.49	\$165.87	\$1,138.08	\$275.81	\$128.69	\$424.72	\$182.29
Cigars and candy inventory, July 1, 1921.....	1,769.19	461.28	3,628.27	364.74	646.53	614.80	513.25
Salable merchandise inventory, July 1, 1921.....	1,007.33	.....	4,813.11	163.42	.....	1,128.96	.....
Total expenditures, fiscal year 1922.....	59,078.04	16,375.51	116,650.88	15,215.09	16,144.19	23,534.56	13,490.49
Earnings, fiscal year 1922.....	3,816.46	1,784.43	9,125.01	968.17	4,074.15	233.83	2,080.46
Total.....	66,012.51	18,787.09	135,355.30	15,050.89	20,993.56	26,938.87	16,216.49
Soda fountain inventory, June 30, 1922.....	345.87	151.43	995.71	222.16	152.03	360.35	206.34
Cigars and candy inventory, June 30, 1922.....	1,216.43	495.26	3,119.24	240.05	562.01	795.85	284.44
Salable merchandise inventory, June 30, 1922.....	1,549.03	.....	5,198.10	188.04	.....	807.70	.....
Total income, fiscal year 1922.....	62,901.18	18,148.80	126,042.25	14,400.64	20,279.52	23,974.97	15,725.71
Total.....	66,012.51	18,787.09	135,365.30	15,050.89	20,993.56	25,938.87	16,216.49

	Cristobal.	Cristobal silver.	Red tank.	Balboa boathouse.	B. C. P. stock.	General secretary.	Total.
Soda fountain inventory, July 1, 1921.....	\$520.44	\$215.65	\$122.15	\$45.31	.....	.....	\$3,560.45
Cigars and candy inventory, July 1, 1921.....	1,727.40	1,064.41	214.30	112.75	.....	.....	11,116.92
Salable merchandise inventory, July 1, 1921.....	684.42	.....	.....	340.45	.....	.....	8,137.69
Bureau clubs and playgrounds stock inventory, July 1, 1921.....	.....	.....	.....	.....	\$16,618.91	.....	16,618.91
Total expenditures, fiscal year 1922.....	52,181.15	40,469.84	11,869.45	5,608.00	70,058.45	\$1,530.34	442,205.99
Earnings, fiscal year 1922.....	7,383.51	9,211.98	1,549.57	952.31	3,201.96	1,310.74	37,304.32
Total.....	62,496.92	50,961.88	13,755.47	7,058.82	83,475.40	2,841.08	518,944.28
Soda fountain inventory, June 30, 1922.....	366.75	128.58	125.38	23.91	.....	.....	3,078.51
Cigars and candy inventory, June 30, 1922.....	969.06	904.00	378.75	57.85	.....	.....	9,103.74
Salable merchandise inventory, June 30, 1922.....	747.00	.....	.....	297.10	.....	.....	8,786.97
Bureau clubs and playgrounds stock inventory, June 30, 1922.....	.....	.....	.....	.....	14,126.35	.....	14,126.35
Total income, fiscal year 1922.....	60,414.11	49,848.30	13,251.34	6,679.96	69,349.05	2,841.08	483,848.71
Total.....	62,496.92	50,961.88	13,755.47	7,058.82	83,475.40	2,841.08	518,944.28

¹ Indicate losses.

TABLE NO. 44.—*Bureau of clubs and playgrounds, balance sheet, June 30, 1922.*

ASSETS.		LIABILITIES.	
Cash on hand:		Surplus:	
Secretaries' balances.....	\$7,116.46	To June 30, 1921.....	\$77,217.24
Deposited with collector.....	100,355.21	Profit, current fiscal year.....	37,304.32
	\$107,471.67		\$114,521.56
Inventories:		Accounts payable:	
Soda fountain.....	3,078.51	Audited vouchers.....	35,804.87
Cigars and candy.....	9,103.74	Panama Railroad Co. (swimming pool).....	200.00
Salable merchandise.....	8,786.97		36,004.87
Bureau clubs and playgrounds stock.....	14,126.35		
	35,093.57		
Accounts receivable: Registered bills.....	7,959.19		
Total.....	150,526.43	Total.....	150,526.43

TABLE NO. 45.—*Commissary coupons issued, sold, and honored during the fiscal year 1922.*¹

	Issued on pay-roll deduction.	Sold for cash.
Books, \$2.50 silver.....	\$36, 572. 50	\$65, 020. 00
Books, \$5 silver.....	1, 186, 500. 00	29, 490. 00
Books, \$7.50 silver.....	566, 257. 50	5, 467. 50
Books, \$5 gold.....	43, 085. 00	464, 675. 00
Books, \$15 gold.....	1, 133, 220. 00	736, 275. 00
Total value.....	2, 965, 635. 00	1, 300, 917. 50

COMMISSARY COUPONS HONORED.

Commissaries.....	\$3, 885, 875. 05
Hotels and messes.....	247, 281. 55
Ancon nursery.....	195. 52
Marine equipment.....	337. 45
Panama Canal club houses.....	113, 863. 39
Army and Navy Y. M. C. A.....	3, 712. 71
Y. W. C. A.....	1, 669. 15
Dispensaries.....	39. 50
Restaurants under contract.....	31, 112. 07
Total value.....	4, 284, 086. 39

¹ This table is summarized. Figures are given in greater detail in table of same number in annual report of accounting department.

TABLE NO. 54.—Summary of commercial traffic through The Panama Canal during the fiscal year 1922 and since its opening to commercial traffic.

	Atlantic to Pacific.				Pacific to Atlantic.				Total.			
	Ves- sels.	Registered tonnage.		Tons of cargo.	Ves- sels.	Registered tonnage.		Tons of cargo.	Ves- sels.	Registered tonnage.		Tons of cargo.
		Gross.	Net.			Gross.	Net.			Gross.	Net.	
1921.												
July.....	105	508,670	403,051	235,440	101	514,132	407,562	450,542	206	1,022,802	810,613	708,982
August.....	120	607,852	487,219	317,970	116	611,965	478,057	521,303	236	1,219,817	985,276	839,273
September.....	128	699,087	530,634	300,720	93	498,133	394,503	454,174	221	1,167,220	925,137	754,894
October.....	131	708,363	571,175	374,437	124	627,449	498,379	611,338	255	1,335,812	1,089,554	985,775
November.....	123	671,741	539,017	386,681	99	512,416	403,394	468,759	222	1,184,157	942,411	855,441
December.....	135	720,502	575,669	517,110	104	563,997	441,575	435,943	239	1,284,499	1,017,244	933,053
Total for first half of fiscal year.....	742	3,896,215	3,106,765	2,155,358	637	3,328,092	2,623,470	2,942,069	1,379	7,214,307	5,730,235	5,097,417
1922.												
January.....	125	646,371	513,764	493,591	85	423,469	332,752	313,707	210	1,069,840	846,516	807,298
February.....	114	605,323	488,005	442,825	98	499,713	398,530	395,249	212	1,105,036	896,535	838,074
March.....	135	724,316	586,041	531,932	96	502,635	389,770	378,137	234	1,236,971	975,811	930,069
April.....	121	650,055	520,688	523,453	109	569,253	454,143	483,014	230	1,219,333	974,833	1,046,047
May.....	134	742,419	594,713	673,395	109	535,134	438,103	483,109	243	1,297,533	1,032,816	1,138,507
June.....	135	752,082	594,186	586,377	93	475,956	376,517	391,101	228	1,228,088	970,713	977,478
Total for second half of fiscal year.....	767	4,120,566	3,297,407	3,340,576	590	3,026,210	2,389,817	2,448,917	1,357	7,146,776	5,687,224	5,787,493
Total for fiscal year 1922.....	1,509	8,006,781	6,404,172	5,495,934	1,227	6,354,302	5,013,287	5,389,976	2,736	14,361,083	11,417,459	10,884,910
Fiscal year ended June 30—												
1915.....	522	2,657,985	1,860,276	2,070,993	553	2,758,922	1,932,296	2,817,461	1,075	5,416,787	3,792,572	4,898,454
1916.....	396	1,912,846	1,277,728	1,369,019	362	1,693,693	1,118,465	1,725,995	758	3,590,529	2,396,162	3,094,114
1917.....	874	4,170,733	2,819,948	2,929,280	929	4,360,088	2,978,709	4,129,303	1,803	8,530,821	5,798,557	7,058,583
1918.....	915	3,938,042	2,726,542	2,639,300	1,154	5,433,297	3,837,531	4,802,731	2,069	9,370,339	6,574,073	7,532,031
1919.....	857	3,458,417	2,673,958	2,740,254	1,154	4,418,186	3,451,032	4,170,367	2,024	7,876,603	6,124,990	6,916,621
1920.....	1,180	5,391,567	4,168,873	4,092,516	1,298	5,668,252	4,377,171	5,261,983	2,478	11,059,819	8,546,044	9,374,499
1921.....	1,471	7,287,556	5,740,902	5,892,078	1,421	7,234,850	5,674,974	6,707,136	2,892	14,522,415	11,415,876	11,599,214
1922.....	1,509	8,006,781	6,404,172	5,495,934	1,227	6,354,302	5,013,287	5,389,976	2,736	14,361,083	11,417,459	10,884,910
Total.....	7,724	36,823,807	27,682,299	27,229,354	8,111	37,911,589	28,383,434	34,119,052	15,835	74,735,396	56,065,733	61,348,406

TABLE No. 55.—Number of commercial vessels of various nationalities passing through The Panama Canal.

	Argentinian.	Belgian.	Brazilian.	British.	Canadian.	Chilean.	Chinese.	Colombian.	Costa Rican.	Cuban.	Danish.	Dutch.	Ecuadorian.	Finnish.	French.	German.	Greek.	Honduran.	Italian.	Japanese.	Mexican.	Nicaraguan.	Norwegian.	Panamanian.	Peruvian.	Portuguese.	Russian.	Spanish.	Swedish.	United States.	Uruguayan.	Yugoslavian.	Total.	
ATLANTIC TO PACIFIC.																																		
1921—July.....				40		1		1			4	2			2			2	8	4			2	1	2				1	36		106		
August.....				51		2					2	2			1					9			5		3					43		120		
September.....				44		3					2	2			4				2	15			6		3					46		126		
October.....				42		3					3	2			3				1	19			4		3					43		131		
November.....				40		2					3	2			3				1	11			7		2					45		128		
December.....				51		3					3	2			3				2	14			7		1					44		135		
1922—January.....				50		3					1	2			2				2	6			4		3					47		125		
February.....				41		3					1	2			1				2	9			5		2					46		114		
March.....				45		3					3	2			4				1	10			6		5					47		138		
April.....				42		3					3	2			1				1	8			8		2					47		121		
May.....				43		3					3	1			3				2	7			1		6					47		134		
June.....				47		2					3	3			3				1	5			5		3					57		135		
Total fiscal year—				533		27			1		25	34			28	20	3		11	122	6			68	3	30				4	21	573		1,509
1922.....			1	502		40			8		28	26			26	3			13	86	4			76	5	32				22	15	579		1,471
1920.....			2	363		38					4	17			9	5			33	94				48	3	37				2	10	493		1,180
1919.....				306		48			6		37	6			29				13	47				56	4	33				2	10	267		887
1918.....				305		50			1		44	30			19				2	33				145	4	41				5	12	218		915
1917.....				371		50			11		3	26			4				1	54	6			70	4	43				1	7	176		874
1916.....				193		16					10	11			2				1	19				18	2	16				1	5	103		386
1915.....				226		16					11	5			2				2	1	4			1	16						7	223		522
Totals.....	1	3	2,829	3,285	6	1	36	3	185	165	117	28	5	3	42	449	16	2	495	17	234	1	13	63	87	2,632	2	1					7,724	
PACIFIC TO ATLANTIC.																																		
1921—July.....				42		2					3	2			1				2	4			3							37		101		
August.....				32		3						3			1					14			5							51		116		
September.....				31		1						2			1				1	8			4							41		93		
October.....				48		3						5			2				1	10			4							1	46		124	
November.....				32		1					1	1			3				2	7			5							2	36		99	
December.....				37		2					2	3			3	2			2	4			3							1	43		104	

REPORT OF GOVERNOR OF THE PANAMA CANAL.

TABLE No. 54.—Summary of commercial traffic through The Panama Canal during the fiscal year 1922 and since its opening to commercial traffic.

	Atlantic to Pacific.				Pacific to Atlantic.				Total.				
	Ves- sels.	Registered tonnage.		Tons of cargo.	Ves- sels.	Registered tonnage.		Tons of cargo.	Ves- sels.	Registered tonnage.		Tons of cargo.	
		Gross.	Net.			Gross.	Net.			Gross.	Net.		
1921.													
July.....	105	508,670	403,051	258,440	101	514,132	407,562	450,542	206	1,022,802	810,613	708,982	
August.....	120	607,852	487,219	317,970	116	611,965	478,637	521,303	236	1,219,817	948,276	830,273	
September.....	128	609,067	530,634	300,720	133	495,133	394,373	434,374	231	1,119,870	925,137	754,594	
October.....	131	708,363	571,175	374,877	124	627,449	403,379	611,338	255	1,335,812	1,069,554	938,775	
November.....	123	671,741	539,017	386,031	99	512,416	403,304	468,739	222	1,184,157	942,411	855,440	
December.....	135	720,502	573,669	317,110	104	563,997	441,375	435,943	239	1,284,499	1,017,244	953,053	
Total for first half of fiscal year.....	742	3,886,215	3,106,765	2,155,358	637	3,328,092	2,623,470	2,942,059	1,379	7,214,307	5,730,235	5,097,417	
1922.													
January.....	125	646,371	513,764	493,591	85	423,469	332,752	313,707	210	1,069,840	846,516	807,298	
February.....	114	605,323	488,005	442,825	98	490,713	396,530	395,249	212	1,105,036	896,535	838,074	
March.....	138	724,316	586,041	581,952	96	502,655	396,770	378,137	234	1,286,971	975,811	960,090	
April.....	121	650,055	520,688	562,433	109	569,283	454,145	483,614	230	1,219,338	974,833	1,046,047	
May.....	134	742,419	594,713	673,398	109	555,134	438,103	485,109	243	1,297,553	1,032,816	1,158,507	
June.....	135	752,082	594,196	586,377	93	475,956	376,517	391,101	228	1,228,038	1,070,713	977,478	
Total for second half of fiscal year.....	767	4,120,566	3,297,407	3,340,576	590	3,026,210	2,389,817	2,446,917	1,357	7,146,776	5,687,224	5,787,463	
Total for fiscal year 1922.....	1,509	8,006,781	6,404,172	5,495,934	1,227	6,354,302	5,013,287	5,388,976	2,736	14,361,083	11,417,459	10,884,910	
Fiscal year ended June 30—													
1915.....	522	2,657,865	1,860,276	2,070,993	553	2,758,922	1,932,296	2,817,461	1,075	5,416,787	3,792,572	4,888,454	
1916.....	396	1,912,846	1,277,728	1,369,019	362	1,683,663	1,118,434	1,725,065	758	3,596,529	2,396,162	3,004,114	
1917.....	874	4,170,733	2,819,948	2,929,260	929	4,300,068	2,978,709	4,129,303	1,803	8,530,821	5,798,557	7,058,563	
1918.....	915	3,988,042	2,736,542	2,639,300	1,154	5,453,297	3,837,531	4,892,731	2,060	9,371,339	6,574,073	7,532,031	
1919.....	3,488,417	2,740,254	2,418,186	2,740,254	1,167	4,416,186	3,451,032	4,176,367	2,024	7,876,903	6,124,990	6,916,621	
1920.....	1,180	5,391,567	4,168,873	4,092,516	1,298	5,668,252	4,377,171	5,281,983	2,478	11,059,819	8,546,044	9,374,499	
1921.....	1,471	7,287,556	5,740,902	5,892,078	1,421	7,234,859	5,674,974	6,707,136	2,892	14,522,415	11,415,876	11,569,214	
1922.....	1,509	8,006,781	6,404,172	5,495,934	1,227	6,354,302	5,013,287	5,388,976	2,736	14,361,083	11,417,459	10,884,910	
Total.....	7,724	36,823,807	27,682,299	27,289,354	8,111	37,911,589	28,383,434	34,119,052	15,835	74,735,396	56,065,733	61,348,406	

TABLE No. 56-A.—Origin and destination of all commercial cargo passing through The Panama Canal from the Atlantic to The Pacific, fiscal year 1922.

[Figures represent tons of 2,240 pounds.]

	From—							To—										
	Totals.	West Indies.	South America, east coast.	Canada, east coast.	Mexico, east coast.	Cristobal, Canal Zone.	Other European.	British Isles.	East coast of United States.	South America, west coast.	United States, west coast.	Far East.	Australia.	Canada, west coast.	Central America, west coast.	Balboa, Canal Zone.	Hawaii.	Miscellaneous.
1921.																		
July.....	253,446		669	396	26,624	6,415	24,339	21,271	178,728	37,743	92,115	70,789	39,409	2,563	8,315	950	5,663	893
August.....	317,970	7,000	2,105	396	26,718	6,534	13,699	24,013	237,801	56,422	59,812	116,429	47,416	7,759	1,128	28,114	2,400	
September.....	300,720	2,013	4,950	3,280	17,889	7,274	14,340	29,820	221,154	31,906	86,516	115,561	42,986	5,704	3,729	12,038		
October.....	374,437		5,313	3,398	45,809	6,510	21,320	49,100	232,887	40,964	119,102	132,638	56,467	16,347	8,443		476	
November.....	386,681		4,098	29,300	29,300	7,450	18,974	74,678	255,781	37,181	133,760	123,439	70,059	2,030	2,989	9,000	8,243	
December.....	517,110	11,743	9,439	4,343	40,300	7,158	43,647	63,926	336,554	62,582	125,285	210,010	66,854	7,433	5,021	25,672	11,028	3,225
One-half year.....	2,155,358	20,756	22,974	11,417	186,640	41,541	136,319	262,808	1,472,903	266,778	616,590	768,866	323,071	41,836	29,625	75,774	28,700	4,118
1922.																		
January.....	493,591	37,515	3,675	1,783	54,675	8,072	25,209	73,381	289,281	74,514	136,275	150,439	74,229	28,166	5,929	10,540	13,499	
February.....	442,825	12,790	7,014	3,415	41,737	6,063	14,346	54,731	302,729	77,958	130,128	154,156	63,709	7,376	2,798	6,700		
March.....	581,952	30,728	7,354	7,500	31,582	7,399	36,311	66,262	408,578	65,004	176,064	219,013	65,285	34,608	2,967	8,270	6,099	4,642
April.....	592,433	36,139	7,521	2,463	29,100	6,434	37,833	63,510	379,333	98,496	184,819	183,072	58,400	10,044	2,520	10,535	14,547	
May.....	673,398	11,600	7,006	2,846	45,946	8,027	43,731	44,842	506,330	114,145	226,671	288,832	44,724	10,426	6,484	10,333	14,120	1,663
June.....	586,377	7,538	5,891	2,500	42,488	7,076	31,339	77,258	412,287	117,484	202,362	145,951	69,034	15,849	1,652	15,963	8,100	9,862
One-half year.....	3,340,576	136,306	31,461	13,757	248,528	43,131	188,969	379,984	2,298,538	547,601	1,066,319	1,121,463	375,381	106,469	22,350	52,341	42,365	16,287
Fiscal year.....	5,495,934	157,994	54,435	25,174	435,168	84,672	325,188	642,792	3,771,441	814,379	1,672,909	1,890,329	698,452	148,805	51,975	128,115	71,065	20,405
Per cent of total cargo:																		
1922.....	100.0	2.9	1.0	0.5	7.9	1.5	5.9	11.7	88.6	14.8	30.5	34.4	12.7	2.7	0.9	2.3	1.3	0.4
1921.....	.....	1.6	.5	.7	18.2	2.3	4.5	9.3	63.0	32.9	20.0	22.3	18.4	2.1	.8	3.3	.....	.2

TABLE No. 56-B.—*Origin and destination of all commercial cargo passing through The Panama Canal from the Pacific to the Atlantic, fiscal year 1922.*
 [Figures represent tons of 2,240 pounds.]

		From—						To—							
Totals.	Miscellaneous.	Hawaiian Islands.	West coast of Central Amer. Ica.	West coast of South America.	Far East.	West coast of United States.	West coast of South America.	Other Euro- pean.	British Isles.	Cristobal Canal Zone.	East coast of Can- ada.	West Indies.	East coast of South Amer- ica.	Africa.	Miscel- laneous.
1921.															
July.....	450,542	33,305	4,922	8,559	63,747	222,647	77,502	102,416	165,229	11,167	3,246	3,540	208	.....	.....
August.....	521,303	29,700	4,785	4,978	56,462	203,564	102,204	87,038	205,364	13,407	1,705	3,969	724	.....	2,842
September.....	454,174	14,766	1,120	6,217	26,020	319,197	75,338	121,529	160,254	11,989	.....	4,896	704	.....	.....
October.....	611,338	9,629	1,944	14,658	36,605	372,518	120,611	193,963	202,843	14,711	123	5,073	30	9,500	5,154
November.....	468,759	2,630	412	11,009	5,775	293,815	125,244	180,807	87,828	8,512	.....	5,221	488	.....	.....
December.....	435,943	5,981	2,600	4,669	37,528	206,259	145,428	170,110	118,153	11,780	682	4,435	14	.....	2,526
One-half year.....	2,942,059	302	96,311	15,783	50,090	226,137	649,327	1,047,240	948,651	71,566	5,756	27,134	2,168	9,500	10,522
1922.															
January.....	313,707	.....	8,055	4,197	11,263	29,079	90,975	155,948	95,763	5,611	.....	2,285	674	.....	.....
February.....	395,249	11,072	7,496	7,839	40,400	39,881	110,701	172,536	157,035	9,609	580	2,193	445	.....	.....
March.....	378,137	4,866	311	15,418	30,822	47,596	78,066	194,446	112,716	11,746	.....	963	.....	.....	616
April.....	483,614	.....	2,228	12,207	11,127	62,754	151,761	233,354	133,719	18,399	116	5,030	2,233	4,581	1,639
May.....	485,109	20,944	.....	17,560	16,077	24,134	35,935	245,877	186,468	13,380	67	3,178	417	.....	800
June.....	391,101	29,541	.....	7,553	21,197	9,940	100,574	226,284	90,266	14,571	.....	2,704	927	.....	.....
One-half year.....	2,446,917	66,413	16,090	64,804	130,891	213,386	668,519	1,248,475	727,935	73,319	765	16,353	4,756	4,581	3,055
Fiscal year.....	5,388,976	66,715	112,401	80,587	180,981	439,523	1,317,846	2,295,715	1,676,596	144,885	6,521	43,487	6,924	14,081	13,577
Per cent of total cargo:															
1922.....	100.0	1.2	2.1	1.5	3.3	8.2	24.5	42.7	31.1	2.7	0.1	0.8	0.1	0.2	0.2
1921.....	100.0	.1	1.1	.9	2.2	12.7	40.0	39.4	30.9	3.4	.3	2.7	1.4	1.3	1.0

TABLE NO. 57-A.—Number of commercial vessels, by nationality, passing through The Panama Canal from its opening to June 30, 1922, by fiscal years.

Nationality.	1915	1916	1917	1918	1919	1920	1921	1922.	Total.
Argentinian		1		1					2
Belgian					1	1	2		4
Brazilian						3	1		4
British	465	358	780	702	607	753	972	935	5,572
Chilean	35	33	99	96	93	79	63	53	551
Chinese				2	4	2	4		12
Colombian					1				2
Costa Rican			23	19	12	1	16	1	72
Cuban			6				1		7
Danish	24	18	43	100	79	9	60	53	386
Dutch	7	15	74	48	19	29	50	66	308
Ecuadorian					1				1
Finnish							2		2
French	3	1	9	52	104	60	44	51	324
German						17	19	37	73
Greek				2	3			5	10
Honduran	3	3							6
Italian	2	1	2	4		26	25	20	80
Japanese	6	24	72	54	87	118	136	189	686
Mexican			13	1	1		4	6	25
Nicaraguan	1	2	2						5
Norwegian	42	44	145	206	128	106	140	113	1,014
Panamanian		3	5	2			8	8	31
Peruvian	4	30	86	83	64	75	60	60	462
Portuguese						2			2
Russian	6	1	2	3	3	2	4		21
Spanish			20	11	5	41	44	9	130
Swedish	17	13	18	26	27	19	25	35	180
United States	459	213	404	567	784	1,129	1,210	1,095	5,861
Uruguayan					1				2
Yugoslavian							2		2
Total	1,075	758	1,803	2,069	2,024	2,478	2,892	2,736	15,835

TABLE NO. 57-B.—Tons of cargo carried by commercial vessels passing through The Panama Canal from its opening to June 30, 1922, by fiscal years.

Nationality.	1915	1916	1917	1918	1919	1920	1921	1922	Total.
Belgian					464	406	12,700		13,570
Brazilian						8,916	6,700		15,616
British	2,200,514	1,570,660	3,393,750	2,615,675	1,876,939	2,830,268	3,738,257	3,329,861	21,555,924
Chilean	50,879	53,573	184,446	153,259	161,340	104,738	61,737	46,182	816,154
Chinese				13,417	13,421	13,700	14,400		54,938
Colombian						27			27
Costa Rican			3,069	2,091	1,137		2,112		8,409
Cuban			7,370				1,200		8,570
Danish	116,603	94,950	242,567	420,063	325,277	42,533	322,059	272,779	1,836,831
Dutch	26,402	61,959	314,203	233,063	119,297	128,442	216,488	290,573	1,390,427
Ecuadorian					72				72
Finnish							7,101		7,101
French	13,600	7,176	36,680	159,859	286,812	125,249	132,836	139,463	901,675
German						59,239	73,837	121,888	254,964
Greek				5,741	8,301			11,956	25,998
Honduran		321							321
Italian	900		5,700	13,793		63,441	47,988	38,851	170,673
Japanese	42,600	117,780	446,358	407,399	503,427	726,338	758,617	1,044,515	4,047,034
Mexican			22,545	253	142		3,785	10	26,735
Nicaraguan	6								6
Norwegian	166,522	229,368	597,581	1,090,823	577,679	404,322	637,887	408,268	4,112,451
Panamanian			135			872	1,500		3,033
Peruvian	8,202	62,210	159,609	143,344	121,524	119,418	105,322	64,370	783,999
Portuguese						10,775			10,775
Russian	21,030	24	3,230	7,059	8,340	12,967	11,343		63,893
Spanish			71,080	35,394	10,047	101,563	143,076	23,701	384,861
Swedish	53,292	47,236	94,515	132,521	143,516	74,244	128,919	141,448	815,691
United States	2,187,904	848,857	1,475,725	2,098,277	2,758,886	4,547,140	5,163,025	4,950,519	24,030,333
Yugoslavian							8,325		8,325
Total	4,888,454	3,094,114	7,058,563	7,532,031	6,916,621	9,374,499	11,599,214	10,884,910	61,348,406

TABLE NO. 57-C.—*The Panama Canal net tonnage of commercial vessels, by nationality, passing through The Panama Canal from its opening to June 30, 1922, by fiscal years.*

Nationality.	1915	1916	1917	1918	1919	1920	1921	1922	Total.
Argentinian.....		2,335		(¹)					2,335
Belgian.....					265	266	8,092		8,623
Brazilian.....						19,164	4,566		23,730
British.....	1,630,833	1,161,097	2,663,250	2,529,203	1,915,744	2,760,188	3,978,329	3,795,526	20,434,170
Chilean.....	94,638	91,243	265,210	254,841	253,561	212,000	159,727	150,398	1,481,618
Chinese.....				7,799	15,204	7,799	12,098		42,900
Colombian.....					66	95			161
Costa Rican.....			1,909	1,577	995	25	2,794		7,308
Cuban.....			9,222				702		9,994
Danish.....	92,537	68,011	163,832	272,946	213,534	32,221	236,512	227,473	1,307,116
Dutch.....	21,075	39,642	260,500	197,627	88,299	152,535	248,801	283,428	1,301,907
Ecuadorian.....					66				66
Finnish.....							4,281		4,281
French.....	10,703	4,343	38,889	147,805	253,774	114,664	155,899	190,171	918,238
German.....				6,572		52,755	67,334	122,893	242,962
Greek.....					8,003			15,618	33,193
Honduran.....	122	484							606
Italian.....	4,158	3,861	6,430	17,218		98,692	102,783	73,393	306,535
Japanese.....	24,897	81,818	291,500	238,814	341,064	515,243	613,245	872,466	2,979,047
Mexican.....			24,446	229	113		5,032	2,219	32,039
Nicaraguan.....	46		1,593						1,644
Norwegian.....	130,776	172,459	490,534	876,024	497,555	397,632	548,227	385,007	3,498,214
Panamanian.....	15	439	160	60	1,007	1,370	700		3,751
Peruvian.....	9,403	74,429	218,593	208,958	106,956	191,689	157,495	161,930	1,189,453
Portuguese.....						9,002			9,002
Russian.....	22,400	1,475	4,546	5,700	5,699	6,093	11,279		57,192
Spanish.....			49,124	24,409	11,069	106,651	117,400	27,264	335,974
Swedish.....	50,824	41,537	69,202	80,191	95,694	76,825	113,661	124,446	652,370
United States.....	1,700,145	652,989	1,239,492	1,704,040	2,257,342	3,791,088	4,861,761	4,971,509	21,178,366
Uruguayan.....					(²)	410			410
Yugoslavian.....							4,508		4,508
Total.....	3,792,572	2,896,162	5,798,557	6,574,073	6,124,990	8,546,044	11,415,876	11,417,459	56,065,733

¹ Argentinian Navy school ship of 2,187 tons displacement.² Uruguayan cruiser of 3,100 tons displacement.TABLE NO. 58.—*Statement showing the number of vessels, the Panama Canal net tonnage, tolls assessed, and tons of cargo carried by vessels of the principal nations passing through The Panama Canal during the first eight years of its operation.*

Nationality.	Year.	Number of ships.	Panama Canal net tonnage.	Tolls.	Tons of cargo.
United States.....	1915	459	1,700,145	\$2,002,845.77	2,187,904
	1916	213	652,989	724,219.01	848,857
	1917	404	1,239,492	1,238,322.63	1,475,725
	1918	567	1,704,040	1,713,827.23	2,098,277
	1919	784	2,257,342	2,327,261.48	2,758,886
	1920	1,129	3,791,088	3,805,924.77	4,547,140
	1921	1,210	4,861,761	4,784,577.35	5,163,025
	1922	1,095	4,971,509	4,867,495.81	4,950,519
		5,861	21,178,366	21,464,474.05	24,030,333
British.....	1915	465	1,630,833	1,847,341.10	2,200,514
	1916	358	1,161,097	1,140,395.07	1,570,660
	1917	780	2,663,250	2,595,158.60	3,393,750
	1918	702	2,529,203	2,498,596.49	2,615,675
	1919	607	1,915,744	1,954,715.87	1,876,939
	1920	753	2,760,188	2,805,018.50	2,830,268
	1921	972	3,978,329	3,989,281.58	3,738,257
	1922	935	3,795,526	3,728,007.80	3,329,861
		5,572	20,434,170	20,558,515.01	21,555,924
Norwegian.....	1915	42	130,776	141,066.91	166,522
	1916	44	172,459	149,357.56	229,368
	1917	145	490,534	448,948.53	597,581
	1918	296	876,024	823,748.57	1,090,823
	1919	128	497,555	460,057.68	577,679
	1920	106	397,632	371,408.79	404,323
	1921	140	548,227	523,311.94	637,887
	1922	113	385,007	374,870.62	408,268
		1,014	3,498,214	3,292,770.60	4,112,451

TABLE NO. 58.—Statement showing the number of vessels, the Panama Canal net tonnage, tolls assessed, and tons of cargo carried by vessels of the principal nations passing through The Panama Canal during the first eight years of its operation—Continued.

Nationality.	Year.	Number of ships.	Panama Canal net tonnage.	Tolls.	Tons of cargo.
Japanese.....	1915	6	24,897	\$30,260.40	42,600
	1916	24	81,818	88,229.68	117,780
	1917	72	281,500	305,702.63	446,358
	1918	54	238,814	248,063.30	407,399
	1919	87	341,064	364,622.57	503,427
	1920	118	515,243	543,936.93	726,338
	1921	136	613,245	655,176.51	758,617
	1922	189	872,466	953,949.00	1,044,515
		686	2,979,047	3,189,941.02	4,047,034
Chilean.....	1915	35	94,638	101,275.95	50,879
	1916	33	91,243	80,192.25	53,573
	1917	99	265,210	236,588.20	184,446
	1918	96	254,841	223,146.30	153,259
	1919	93	253,561	212,511.90	161,340
	1920	79	212,000	169,472.55	104,738
	1921	63	159,727	147,023.75	61,737
	1922	53	150,398	115,757.90	46,182
		551	1,481,618	1,285,968.80	816,154
Danish.....	1915	24	92,537	110,680.30	116,603
	1916	18	68,011	66,938.80	94,950
	1917	43	163,882	141,461.44	242,567
	1918	100	272,946	249,761.14	420,063
	1919	79	213,534	207,404.47	325,277
	1920	9	32,221	43,528.35	42,533
	1921	60	236,512	241,411.86	322,059
	1922	53	227,473	222,146.65	272,779
		386	1,307,116	1,283,333.01	1,836,831
Dutch.....	1915	7	21,075	24,103.58	26,402
	1916	15	39,642	43,910.44	61,959
	1917	74	260,500	270,321.78	314,203
	1918	48	197,627	214,211.46	233,063
	1919	19	88,299	97,467.75	119,297
	1920	29	152,535	126,868.98	128,442
	1921	50	248,801	229,248.94	216,488
	1922	66	293,428	260,138.38	290,573
		308	1,301,907	1,266,271.31	1,390,427
Peruvian.....	1915	4	9,403	10,034.30	8,202
	1916	30	74,429	67,691.30	62,210
	1917	86	218,593	199,860.25	159,609
	1918	83	208,958	177,732.30	143,344
	1919	64	166,956	133,243.12	121,524
	1920	75	191,689	161,964.75	119,418
	1921	60	157,495	107,160.64	105,322
	1922	60	161,930	103,035.30	64,370
		462	1,189,453	960,721.96	783,999
French.....	1915	3	10,703	12,843.60	13,600
	1916	1	4,343	4,782.50	7,176
	1917	9	38,889	39,446.42	36,680
	1918	52	147,805	152,028.03	159,859
	1919	104	253,774	283,971.06	286,812
	1920	60	114,664	127,818.17	125,249
	1921	44	155,889	164,575.94	132,836
	1922	51	190,171	216,475.40	139,463
		324	916,238	1,001,941.12	901,675
Swedish.....	1915	17	50,824	58,174.76	53,292
	1916	13	41,537	35,892.70	47,236
	1917	18	69,202	56,793.78	94,515
	1918	26	80,191	74,621.25	132,521
	1919	27	95,684	88,572.73	143,516
	1920	19	76,825	62,268.74	74,244
	1921	25	113,661	93,331.25	128,919
	1922	35	124,446	105,939.90	141,448
		180	652,370	575,595.11	815,691

TABLE NO. 58.—Statement showing the number of vessels, the Panama Canal net tonnage, tolls assessed, and tons of cargo carried by vessels of the principal nations passing through The Panama Canal during the first eight years of its operation—Continued.

Nationality.	Year.	Number of ships.	Panama Canal net tonnage.	Tolls.	Tons cargo.
Spanish.....	1915				
	1916				
	1917	20	49,124	\$47,731.15	71,080
	1918	11	24,469	24,032.78	35,394
	1919	5	11,066	11,092.29	10,047
	1920	41	106,056	98,228.02	101,563
	1921	44	117,400	118,548.41	143,076
	1922	9	27,264	32,712.88	23,701
		130	335,379	332,345.53	384,861
Italian.....	1915	2	4,158	3,992.40	900
	1916	1	3,861	2,779.92	
	1917	2	6,430	6,029.80	5,700
	1918	4	13,218	16,875.70	11,450
	1919				
	1920	26	98,692	98,959.79	63,441
	1921	25	102,783	103,206.60	47,988
	1922	20	73,393	75,511.30	38,851
		80	302,535	307,355.51	168,330
Miscellaneous.....	1915	11	22,583	24,931.12	21,036
	1916	8	4,733	3,700.39	345
	1917	51	41,951	41,097.84	36,349
	1918	30	25,937	22,208.60	30,904
	1919	27	30,411	31,907.67	31,877
	1920	34	97,211	98,534.81	106,802
	1921	63	122,046	120,035.14	143,003
	1922	57	144,448	141,791.47	134,380
		281	489,320	484,207.04	504,696
Total.....	1915	1,075	3,792,572	4,387,550.19	4,888,454
	1916	758	2,396,162	2,408,089.62	3,094,114
	1917	1,803	5,798,557	5,627,463.05	7,058,563
	1918	2,069	6,574,073	6,438,853.15	7,532,031
	1919	2,024	6,124,990	6,172,828.59	6,916,621
	1920	2,478	8,546,044	8,513,933.15	9,374,499
	1921	2,892	11,415,876	11,276,889.91	11,599,214
	1922	2,736	11,417,459	11,197,832.41	10,884,910
		15,835	56,065,733	56,003,440.07	61,348,406



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